The growth of government

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THE GROWTH OF GOVERNMENT

Economic History, Transaction Costs and Property Rights

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door

Marc Peter Henri de Vor

geboren te Heerlen

Promotoren: Prof. Dr. Ir. A. Kapteyn
Prof. Dr. D. C. North

To my mom and dad

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CONTENTS

CHAPTER I

INTRODUCTION

I.1 Objective

Government (however defined and measured) has grown drastically in every Western country over the past century. In the USA, for example, total federal expenditures increased from 2.6% of GNP in 1889 to 23.7% of GNP in 1987[1]. This phenomenon has drawn the attention of many economists, political scientists and other scholars, especially during the last two decades. As a result, an extensive and imposingly diverse body of literature on the subject has emerged.

The growth of government involves many important questions. For instance, why has this omnipresent institution grown so dramatically in the Western World during this century? How is the expansion of the public sector related to the efficiency with which Western economies operate? What accounts for the differences between Western countries with respect to the specific shape of government growth? Is there a limit to the expansion of the public sector? These are only a few questions that can be asked in this context. The literature dealing with these queries has not yet provided a consensus, which justifies an additional inquiry into the expansion of the modern state.

The study at hand focuses entirely on the first question: why has government grown? This means that the other questions are not addressed. An attempt is made to contribute to the debate of government growth in the following three respects: (1) to review and clarify several existing explanations for the growth of government; (2) to present an alternative hypothesis for the expansion of the public sector; and (3) to provide empirical support for this hypothesis.

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[1] Public expenditure (as a percentage of GNP) is a widely used indicator of the scope of public sector activity. The figures cited are taken from Kendrick [1955] and United States Council of Economic Advisers [1989], respectively.

The consideration given to existing explanations illuminates several concepts, measures, assumptions and modes of analysis used in the academic discourse on government growth. The hypothesis regarded in this thesis gives further scrutiny to ideas about the growth of government that differ in several ways from most current views. The empirical part shows the applicability and the promise of this approach, using data from several Western countries.

The hypothesis has not (yet) been converted into a formalized theory, nor are the empirical results obtained from econometric testing. More research is needed in order to achieve these goals. Particularly in the sphere of collecting data, much work remains to be done. Nonetheless, this thesis throws light on a relatively new view regarding the issue of government growth, and will, hopefully, contribute to the search for more conclusive answers to this interesting puzzle.

I.2 Orientation

The growth of government has been studied by scholars of various backgrounds. This study does not deal with all these insights. It concentrates solely on *economic* accounts on government growth, basically neglecting the perspectives of other social sciences.

Let there be no misunderstanding; disregarding other disciplines does not mean to say that one should not expect interesting hypotheses with respect to the growth of government from these disciplines. However, incorporating the ideas of other social sciences would be a far too ambitious aim. Therefore, this thesis focuses entirely on the economics of the growth of government, without paying attention to the insights of the other social sciences.

Many economists consider *Public Choice Theory* as the natural tool for explaining the growth of government. This relatively new field within the economics profession is concerned with the study of nonmarket decision-making, or simply with the application of economic theory to politics. Following Mueller [1989] in his latest survey of the Public Choice literature, the field can be divided into a normative and a positive part.

Normative Public Choice Theory focuses on what the goals of the government

should be and how these goals can be achieved. In fact, much of the normative work deals with the problems of aggregating individual preferences to maximize a social welfare function. Arrow's [1951, rev. ed. 1963] *"Social Choice and Individual Values"* is a classic in this area. Intended as a critique of and an improvement upon the then-prevalent views in *Welfare Economics*, Arrow's *Impossibility Theorem* spawned a large body of *Social Choice* literature, surveyed by Sen [1970], Kelly [1978], Mackay [1980], Suzumura [1983] and others.

Positive Public Choice Theory centers on the actual political decision-making process of the government and attempts to derive testable implications about this process, based on the assumed utility-maximizing behavior of the players involved. Down's [1957] *"An Economic Theory of Democracy"*, Buchanan and Tullock's [1962] *"The Calculus of Consent"* and Breton's [1974] *"The Economic Theory of Representative Government"* are well-known contributions in this context, providing general applications of the economic tools to political resource allocations. More specific research has been done in a wide variety of issues. Seminal achievements were made with respect to the *Median Voter Theorem* [Black, 1958], *Coalition Theory* [Riker, 1962], *Rent-Seeking Theory* [Tullock, 1967; Krueger, 1974], *Bureaucracy Theory* [Niskanen, 1971], *Demand-Revealing Procedures for Public Goods* [Clarke, 1971, 1972; Groves, 1973] and *Deriving Public Sector Preferences* [Denzau and Parks, 1977, 1979]. These issues have been investigated in depth in numerous books and articles, leading to a rich harvest of results [Mueller, 1989].

Over the past few years, an increasing amount of (positive) Public Choice studies with regard to government growth has appeared. It would be wanton to ignore these endeavors. There can be no question that it is worth spending some time to explore the extent in which these Public Choice arguments can be used to construct an alternative and, hopefully, better story on the subject at hand.

As the thesis developed, it became clear that the explanations studied have three shortcomings: (1) they scarcely consider the economic historical dimension; (2) they do not provide an explicit analysis of "transaction costs", i.e. the costs of making exchanges and (3) they seldom refer to the fact that the government specifies and enforces property rights. The sub-title of this study - *"Economic History, Transaction Costs and Property Rights"* - expresses these points.

Economic history is needed since the subject under consideration is explicitly concerned with a period of approximately one hundred years. As North [1978] argued about one and a half decade ago, economic history adds a dimension to economic theory. Economics is customarily conceived of as a discipline of choice subjected to specified constraints. The constraints faced by individual agents are considered as a given for economists, whereas economic historians theorize about how these constraints evolve through time.

Addressing transaction costs is important, because these costs are at the core of explaining the structure of market and *nonmarket* forms of economic organization. Transaction costs theory was founded more than half a century ago, by Coase [1937] in his famous article *"The Nature of the Firm"*. This paper was neglected for decades; then treading in Coase's footsteps, Williamson [1975, 1986] made the most authoritative contributions to modern transaction costs literature.

The impact of property rights specified and enforced by the state on the efficiency of economic systems was demonstrated in *"The Problem of Social Cost"* [1960], another seminal article by Coase. Other well-known publications in the property rights field were written by Demsetz [1967], Cheung [1970], Alchian and Demsetz [1973], De Alessi [1980] and Barzel [1989].

Economic history, transaction costs theory and property rights theory are strongly related to the topic of this study. In order to give a comprehensive explanation for the growth of government it is hypothesized that these three building blocks must be included in the analysis. The next section deals with the way in which this can be accomplished[2].

I.3 Hypothesis

According to Adam Smith [1776], the amount of specialization and division of labor determined the wealth of a nation. Smith argued that the degree of specializa-

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[2] See also Friedman [1991], who mentions the relevance of the new fields of transaction costs and property rights theory in a paper written on the occasion of the Centenary of the "Economic Journal".

tion and division of labor depended upon what he termed "the extent of the market". A larger market size would allow for more specialization and division of labor, resulting in growing economic welfare. The gradual integration of Western Europe with the rest of the world after the Middle Ages, along with economic progress made in many Western European nations lent some support for Smith's proposition.

Following North [1981, ch. 13], Western countries started to use science systematically in order to develop new technologies from roughly the second half the nineteenth century onwards. The consequences of this development were revolutionary. The combination of science and technology involved far greater specialization and division of labor than heretofore. In the USA, for example, the percentage of the population living in urban areas (a proxy often used for the degree of specialization and division of labor) rose from roughly 20% in 1870 to 75% in 1980. This scientific/technological revolution of the late nineteenth century, and the consequent acceleration of specialization in production and employment, ushered in an era of unseen prosperity.

The drastic increase of specialization and division of labor over the past century is the seminal factor in the analysis. This process changed society in almost every aspect. Three changes are relevant with respect to the growth of government.

First, growing specialization and division of labor increased the share of production occurring in the marketplace, resulting in a wider tax-base. Moreover, it improved record keeping and spurred technological progress, which in turn enhanced the efficiency of assessing, collecting and monitoring taxes. Both elements enlarged potential revenues of the state which were required to finance its expanding activities.

Second, growing specialization and division of labor entailed more complicated and impersonal forms of exchanges or transactions in the economy, since more specialized people participated in the market. This made it necessary to devote an increasing amount of resources in order to capture the gains from these exchanges. Many transaction facilities have been provided through voluntary organizations such as banks, insurance companies, real estate businesses and trade. The government has played an increasingly important role in specifying and enforcing property rights and additional rule-making that undergird all transactions in Western societies. Additionally, the state has been concerned with providing social overhead capital in the form

of education, transportation services and several urban services. These social overhead services may be considered as part of the costs of preserving the existing social order, which is in turn a necessary condition for performing transactions.

Third, growing specialization and division of labor created many new margins or issues around which potential interest groups could organize themselves. The bargaining position of these interest groups improved gradually because of the rising interdependence inherent to an increasingly specialized society. The pressure exerted by them to obtain a say in the political process was settled through the extensions of the franchise at the end of the nineteenth and the beginning of the twentieth century. The expansion of the suffrage implied a drastic decline in the costs of using the political arena for redistributions of wealth and income, such as transfers, social insurance and market interventions or regulations. A so-called rent-seeking process evolved, entailing larger public budgets.

Furthermore, a wide variety of these special interest benefits were made available to unorganized groups by the so-called political entrepreneur, often at the expense of diffuse majorities. It is important to note, that the political significance of lower income groups increased in this process. After World War II, most Western nations became "Welfare States", extending a relatively large amount of transfer payments and in-kind benefits to these lower income groups[3].

It is thus hypothesized, that the growth of government is related to the "Wealth of Nations". Increasing specialization and division of labor constituted the underlying force of the increasing scope of public sector activity in the Western World during this century.

I.4 Outline

The dissertation consists of eight chapters. Theorizing about the growth of government, is in fact similar to theorizing about the existence of the government. Chapter II, therefore, reviews briefly the most important explanations for the state. In

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[3] See de Swaan [1988] for an elaborate study on the Welfare States in Europe and the USA.

addition, the mainstream economic theories about modern states are considered. Chapter III offers an examination of the prevailing explanations for the growth of government. The theories of government growth are viewed as extensions of the theories that explain the state. Chapter IV reconsiders the theories of government. The importance of property rights specified and enforced by the state, and attendant transaction costs is explained and illustrated by some brief examples from economic history. Chapter V reconsiders the theories of government growth. An effort is made to provide an elaborate comparative static account for the growth of government, and to include economic history, transaction costs and property rights theory in the analysis. Chapter VI suggests that the level of total transaction costs in an economy can be taken as a proxy for the degree of specialization and division of labor. A simple transaction cost model is formulated from which two operational measures for transaction costs are obtained. Chapter VII provides empirical support for the hypothesis of this study by estimating the development of transaction costs in both the Dutch and German economy. Finally, chapter VIII summarizes this study and provides several main conclusions.

CHAPTER II

GOVERNMENT: MARKET FAILURES OR INTEREST GROUPS?

II.1 Introduction

A state is usually defined as an autonomous political unit which has the power to collect taxes, draft men for work or war, and to decree and enforce laws[1]. It is crucial, however, to recognize the fact that the state has a comparative advantage in violence. The potential use of violence brings the state into a position to specify and enforce property rights. The essence of property rights is the right to exclude, and an organization with a comparative advantage in violence is able to establish these fundamental rules[2].

With the development of settled agriculture, at the beginning of the Ancient era in the eighth millennium B.C., bands consisting of hunters and gatherers began to settle down. There is archaeological evidence of very early urban sites such as Jericho and Catal Huyuk in Anatolia, going back to 8000 B.C. and 6000 B.C., respectively. A process of aggregation led, at a relatively fast rate, to the formation of the first states in history. The "city states" in the plain of Sumer and Akhad in Mesopotamia, and the first dynasties in Egypt, date from approximately the fourth millennium B.C.

The states that appeared during the Ancient World had many different shapes, ranging from despotic to democratic. They all fell into decline and eventually disappeared. Most remarkable was of course the union of the entire then-Western World in the Roman Empire and the ultimate demise of this Empire in the fifth century A.D. However, the emergence and disappearance of political units was not restricted to the eight thousand years that span the Ancient era. This development can be observed throughout history. The mainstream theories of the state are considered briefly in the following section.

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[1] For example, see Carneiro [1970].

[2] See North [1979].

II.2 Contract Theory versus Predatory or Exploitation Theory

The rise of the state is still imperfectly understood. It remains unclear what exactly accounted for the origin of this political organization. A classic controversy exists between voluntaristic and coercive theories. Voluntaristic theories maintain that people rationally and voluntarily gave up their individual sovereignties and united with other units to form a state. Coercive theories claim that war was at the root of the state[3].

A well-known voluntaristic account is the *contract theory* of the state. The *predatory or exploitation theory* is an interpretation of the coercive explanation for the state. It is worthwhile to discuss both examples in some detail.

The contract theory of the state can be traced back to Hobbes. In the *"Leviathan"* [1651], Hobbes conceived a state as a contract between ruler(s) and constituents. This contract limited the activities of the constituents but, in Hobbes' view, people clearly preferred it to anarchy. A classic economic illustration of the contractarian model is the one in which the state trades protection and justice for revenue. Because the provision of justice and protection is subject to economies of scale, it pays to entrust this task to an institution such as the state as it specializes in carrying out these functions. Obviously, total income in a society is higher than it would be if every citizen carried out these functions himself. According to this economic interpretation of the contract theory, the state can be considered as a maximizer of total income in a society.

The predatory or exploitation theory of the state is often associated with the ideas of Marx and Engels. In, for example, the *"The Communist Manifesto"* [1848], these authors set down the familiar assertion that "the executive of the modern state is but a committee for managing the common affairs of the whole bourgeoisie". More generally, the predatory or exploitation model considers the state as an agency of a group or class which extracts income from the rest of the constituents in the interest of that particular group or class. The state maximizes the revenue of the group or class in power, regardless of its impact on the income of the society as a whole.

Both theories illuminate different aspects of the state. Each model remains

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[3] For an elaboration, see Carneiro [1970].

incomplete, as pointed out by North [1979].

> "The contract theory explains the gains of initial contracting (in comparison to anarchy) but does not explain the subsequent maximizing behavior of constituents with diverse interests. The predatory theory ignores the initial gains of contracting and focuses on the extraction of rents from constituents by those who gain control of the state" [North, 1979, p. 251].

The contract theory is a theoretical fiction which may clarify why the state can provide a framework for economizing on the use of resources and, therefore, can promote total societal income. The predatory or exploitation theory may account for inefficient allocations and the decline of political-economic systems.

Both theories are not completely at odds with each other. "It is the distribution of 'violence potential' that reconciles them" [North, 1981, p. 22]. In the contract theory the distribution of violence (in many cases a derivative function of the distribution of wealth) amongst the principals is assumed to be equal, so that none of them has a comparative advantage in gaining control of the state. An unequal distribution is assumed by the predatory or exploitation theory.

Important to the study at hand, is the distinction between contract theory and predatory or exploitation theory. This distinction facilitates the way in which the economic theories about modern states can be analyzed, as is discussed in the next section.

II.3 Market Failure Theory versus Interest Group Theory

In economic theory two general approaches exist to explain the economic role of the state in modern societies: (1) the market failure theory and (2) the interest group theory. The former is associated with the contract theory of the state, the latter with the predatory or exploitation theory[4].

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[4] Almost a century ago, Wicksell [1896] preceded both approaches in his analysis on taxation. Wicksell recognized the distinction between allocative (market failures) and redistributive (interest groups) decisions of the government. His work though focused heavily on the former.

II.3.1 Market Failure Theory

The market failure theory originates from the work of Pigou [1920] in welfare economics. Samuelson [1954], Musgrave [1959] and Buchanan [1967] extended the approach, providing the foundations for the public expenditure theory of public finance.

Similar to the contract theory, in the market failure theory it is assumed that the state plays the role of income maximizer for the society. Put differently, the state is supposed to serve the public interest. This assumption is usually interpreted to mean that the state contributes to Pareto-efficiency within the economy, i.e. a situation where no other feasible allocation exists that is unanimously preferred by all agents.

The starting-point of the approach is a set of conditions under which the market leads to a Pareto-efficient allocation of resources. Then the analysis proceeds with identifying instances where the market fails to function properly in allocating resources. Among the textbook examples of market failures are negative externalities (e.g. pollution), public goods (e.g. defense) and monopolies (e.g. public utilities). In order to achieve Pareto-efficiency in the economy, the government is called upon to remedy these market inadequacies. Thus, they are the economic rationale for government interventions in the marketplace and, therefore, for the government's existence.

The market failure approach stimulated some research that intended to relate government interventions in the market and the preferences of the electorate. An important example of these attempts is the application of the median voter theorem to derive demand functions for public goods. This can be elucidated as follows.

The central idea of the median voter theorem is that the real decision-maker in a political unit, characterized by direct democracy and majority rule, is the voter whose preferences are just "in the middle". This Fiscal Everyman is usually assumed to be the median income earner. His preferences are decisive because a government that chooses a policy far from the policy preferred by the median voter will soon be driven out of office by an opposition that proposes a policy closer to the one preferred by the median voter. If a government provides more units of a public good than demanded by the median voter, for example, the opposition can bring down expenditures by forming a coalition of the median voter and all voters who favor less of the public good than the median voter. From this it is clear that the level of public goods will correspond closely

to that preferred by the median voter. Thus, in order to derive a demand function for public goods, one can write these government expenditures in terms of the characteristics of this voter[5].

The market failure theory captured a strong position within the economics profession. During the last few decades, however, economists have raised at least three general criticisms against this approach.

First, Coase [1960] challenged the approach, particularly Pigou's treatment of externalities. According to Coase, government interventions in the form of levying taxes and offering subsidies are not necessarily required to solve externality problems. In a zero transaction costs world, affected parties by an externality will get together and agree on an allocation of resources which is both Pareto-efficient and independent of any prior assignment of property rights. Hoffman and Spitzer [1982, 1986] and Harrison and Mckee [1985] provided empirical support for this result, usually referred to as the *"Coase Theorem"*[6].

Second, it has been questioned whether the government is able to correct market failures in a perfect and costless way. Wolf [1979] among others focused on the so-called government failures which are disregarded in the market failure approach. Recently, Stiglitz [1989] provided an elaborate discussion on public failures, such as imperfect knowledge and information, ineffective incentive structures and the lack of competition in the public sector. These government failures are assumed to be pervasive and make it dubious whether the government is capable of correcting imperfect markets as is suggested by the market failure approach.

Third, (positive) Public Choice scholars have accused the market failure approach of being normative, prescribing the government what it should do in order to satisfy the

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[5] See for important contributions Barr and Davis [1966], Davis and Haines [1966], Borcherding and Deacon [1972], Bergstrom and Goodman [1973], Denzau and Mackay [1976] and Deacon [1977].

[6] Crucial for the Coase Theorem is the zero transaction costs assumption. In a positive transaction costs world, bargaining towards Pareto-efficiency will not always occur. Government intervention may then be required and the assignments of property rights have an impact on the efficiency with which economies operate. This will be investigated in more detail in chapter IV.

public interest in the society. It is not analyzed how the process of collective action itself can be explained and, except for the demand models for public goods, the market failure theory does not consider the links between the constituency and public policies. In particular this third criticism inspired economists to develop an interest group approach to government.

II.3.2 Interest Group Theory

Bentley's [1908] book at the turn of the century lies at the root of the interest group theory of the government. His work inspired political scientists like Truman [1951, 1959] and Dahl [1961, 1967] in their writings on the pluralist society. Schumpeter [1943], Downs [1957] and Olson [1965] stimulated economists to explain and measure the effects that interest groups have on public policy. McCormick and Tollison [1981] and Tollison [1982] surveyed the literature existing at the beginning of the 1980's, including the articles that attempted to account for the pattern of regulatory intervention in the economy.

The interest group theory is frequently employed by (positive) Public Choice scholars in their analysis of the modern state. In a nutshell, the theory looks as follows. The state is viewed as a transfer mechanism for redistributing wealth and income towards interest groups. Politicians are customarily assumed to be professionals who derive utility only from getting re-elected, resulting in the fact that they maximize votes. Interest groups lobby among political representatives and offer their own votes, along with votes-producing campaign contributions such as money, in-kind services, volunteer labor and so forth. In exchange these interest groups receive the kinds of redistributive public policies they seek. The public interest as such is not intendedly satisfied by the government. It is the outcome of the pursuit of personal interests by politicians and interest groups within a given political/institutional framework.

Becker [1983, 1985, 1989] provided well-known and important contributions to this theory. He focused on the competition among interest groups for political influence. There is only one "good", income, in his model that is redistributed among interest groups by the government. Some groups receive a (net) subsidy, others pay (net) taxes. The process of redistribution which Becker describes, entails distortions in the use of

resources, called deadweight costs. These costs force taxes to rise more rapidly than subsidies. As a result, redistribution will be limited because the total costs covered by taxation will increase more rapidly than the benefits resulting from subsidies. Assuming diminishing returns to producing pressure by interest groups on politicians, an equilibrium is obtained in which the pressure to increase subsidies just equals the opposing pressure to reduce taxes, i.e. the marginal costs of lobbying are for every interest group equal to the marginal benefits from lobbying.

An interesting and USA-specific extension of the interest group theory was made by Denzau and Munger [1986]. They derived a supply price for public policy in the USA, using a maximization model. The model distinguished three sets of agents: (1) legislators; (2) interest groups and (3) unorganized voters. Legislators are assumed to maximize the number of votes they receive in the next election. Interest groups offer a legislator campaign resources in exchange for the expectation of future service. A relatively large group of unorganized constituents votes its pocketbook. A general prediction of their analysis is that interest groups have to pay a higher price in terms of campaign contributions to a legislator, when the political favor they seek has negative spillovers for the large unorganized group of voters. Consequently, interest groups will seek out legislators whose voters are indifferent to the policy that the interest group seeks. This means that not only interest groups but also unorganized voters who have preferences over outcomes are in effect represented in this model, even though they are not organized.

The interest group theory is also known as the rent-seeking theory of the state [Krueger, 1974]. The terminology "rent-seeking" may be confusing. Traditionally, rent is defined as a receipt in excess of a resource owner's opportunity cost. In other words, rent is that part of the payment to an owner of resources above the amount his resources could command in any alternative use. Thus, rent-seeking is usually another word for profit seeking. These activities are generally considered to be socially productive since they drive the market system and create added value in the economy [Kirzner, 1973].

The rent-seeking activities of interest groups have radically different social implications. Lobbying, supplying campaign contributions etc. in order to contrive rents (i.e. redistributions) through the government are socially unproductive activities. Following the rent-seeking literature, the resources used in this process do not create

added value in the economy, but are wasted from the viewpoint of a society [Tullock, 1967; Posner, 1975].

Moreover, rent-seeking by interest groups may lead to a continuous increase of government influence over the private sector. This remark refers to the next chapter. According to several authors, a heavily regulated economy, a high amount of transfer payments, high taxes and high social security contributions cause deadweight costs to rise, distorting the decision-making process in the market sector and making society worse off [Browning, 1978; Browning and Johnson, 1984; Hansson, 1984].

Similar to the general case (i.e. contract theory versus predatory or exploitation theory), the market failure approach and the interest group approach of the state are not inconsistent with each other. It is the distribution of political influence measured in terms of campaign contributions, votes, lobbying etc. among interest groups that reconciles them. The market failure theory assumes an equal distribution of political influence. Given this assumption, the actions of the state serve the public interest. In contrast, the interest group theory assumes an unequal distribution, which gives some groups a comparative advantage in redistributing wealth and income through the state to themselves at the expense of other groups.

II.4 Concluding Remarks

Many efforts have been made to find explanations for the state. In general, one can make a distinction between the contract approach (voluntaristic theory) and the predatory or exploitation approach (coercive theory), reconciled by the distribution of violence potential amongst the principals.

Roughly speaking, there are also two economic theories about modern states: a market failure approach and an interest group approach. The former is an interpretation of the contract view of the state. It sees the government as an institution which corrects market failures in order to maximize total income in a society. The latter is associated with the predatory or exploitation theory of the state. This approach regards the state as a transfer organization for redistributing wealth and income towards interest groups. The resources used in this rent-seeking struggle are wasted from a societal point of view. To the extent that redistributions involve distortions in the allocation of resources in the

economy, societies suffer an additional loss.

Both economic theories of the modern state are reconciled by the assumptions with respect to the distribution of political influence in terms of campaign contributions etc. among interest groups. The market failure approach assumes an equal distribution, legitimizing the public interest postulate. The interest group theory assumes an unequal distribution which gives some groups a comparative advantage in contriving rents through the state.

The next chapter reviews the prevailing theories of government growth, which are interpreted as extensions of the economic theories of the modern state discussed above.

CHAPTER III

GOVERNMENT GROWTH: PUBLIC GOODS OR REDISTRIBUTIONS?

III.1 Introduction

Peacock and Wiseman [1961, 1967] were among the first to study systematically the growth of government. Focusing on the discrete shifts observed in the level of public spending in twentieth-century Britain, they developed the so-called displacement-effect hypothesis. In this view, the state's revenues are constrained by the level of taxation that the constituency will tolerate. During times of emergencies, such as war and economic crisis, the public accepts methods and levels of taxation that would not have been approved under normal circumstances. Following these disturbances, government revenues are only partially reduced and emergency expenditures are rapidly replaced by new public outlays, implying government growth.

This proposition seems reasonable and appears to be true for several countries for some periods of time. It cannot account for all growth in government though. Government has grown in countries that have not been exposed to emergencies like wars etc. Moreover, the rapid rise in government expenditure after World War II cannot be explained by social upheaval in any way.

Nonetheless, Peacock and Wiseman established a research agenda dealing with the growth of government. Since their studies, many explanations for government growth have emerged. Some of these explanations are summarized in publications of Borcherding [1977b, 1985]. Cameron [1978], Larkey, Stolp and Winer [1984] and Mueller [1987] have also surveyed the continuously growing literature. Saunders and Klau [1985] among others have done empirical work on the subject.

This study considers the explanations for the growth of government as extensions of the economic theories of the state outlined in the previous chapter. Hence, there also exist two general types of explanations for government growth. The first is based on the market failure approach and focuses on increasing public goods. The second is based on the interest group or rent-seeking approach and addresses the rising amount of

redistributions in Western societies. The purpose of this chapter is to examine each hypothesis successively[1].

III.2 Public Goods

According to this explanation, the growth of government during the last century is caused by the increased demand to provide public goods (and to remove or mitigate externalities). In order to show this, suppose each citizen has a demand for public goods which is dependent on the price he faces for these goods, his income and some "shift variables" such as urbanization and population density. Applying the median voter theorem, Borcherding [1985] and Mueller [1987] obtain the following demand function for public goods:

$$(3.1)\quad \text{Ln } G = C + \alpha \text{ Ln } P_g + ß \text{ Ln } Y_m + \gamma \text{ Ln } S + \epsilon ,$$

where G is the amount of public goods; C denotes a constant; P_g, Y_m and S represent, respectively, the price of public goods, the income of the median voter and a set of so-called "shift variables"; α, ß and γ depict, respectively, the price elasticity, the income elasticity and the vector of various "shift elasticities" of the demand for public goods; and ϵ is an error term. In equation (1) the growth of government can be explained by a change in the price of public goods (P_g), a change in the income of the median voter (Y_m) and/or a change in shift variables (S), given appropriate elasticities.

Most studies using USA-data find estimates of α that are significantly greater than -1 [Perkins, 1977]. The demand for public goods in the USA is thus found to be inelastic, implying a relative growth of government if there has been an increase in the relative price of public to private goods.

That the relative price of public to private goods will increase was argued more than two decades ago by Baumol [1967]. He hypothesized that the potential productivity

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[1] Fiscal illusion is usually defined as the underestimation of tax burdens by citizens. This phenomenon could be a cause of government growth. However, most authors do not consider fiscal illusion as a persuasive explanation for the growth of government. For a review of the literature on fiscal illusion, see Oates [1988].

advances in the government sector, a large service industry with a relatively low capital-intensity, are likely to be smaller compared to those in the manufacturing and primary sectors. Roughly speaking, real disposable income of a public sector employee matches real disposable income of a private sector employee. With a common wage rate rising in accordance with efficiency gains in the private sector, the costs per unit in the public (service) sector will rise, resulting in a relative price increase. Despite criticism, it is widely accepted that government productivity lags behind private productivity. Borcherding's [1985] computations indicate that almost a third of the growth of government in the USA during 1902-1978 is explained by this Baumol-effect.

Since Y_m has been increasing over time, the corresponding elasticity should be estimated greater than unity if growing personal income explains government growth. According to Mueller [1987], however, only very few studies suggest an income elasticity greater than one. Hence, the increasing personal income proposition is not considered to account for much of the increase in government size.

The preceding argument is of course related to Wagner's [1883] famous Law of Increasing State Activity, i.e. the prediction implying a long-run tendency for the public sector to grow relative to national income. Numerous studies have been undertaken to test Wagner's law. Larkey, Stolp and Winer [1984] among others investigated the evidence and concluded that most empirical work lend weak support to Wagner's Law.

Urbanization or population density are obvious choices for shift variables. In a densely populated area, more people benefit from the provision of a public good or from the removal or mitigation of an externality than in a less populated area. Since urbanization has increased over the past one hundred years in every Western country, one would predict a positive elasticity. However, Borcherding [1985] finds little econometric work that confirms positive corresponding elasticities. Therefore, the increased urbanization proposition is also regarded in the literature to have little explanatory value for government expenditure growth.

To sum up, the public goods explanation for the growth of government turns out to be less compelling than it may have appeared. Although all arguments have intuitive appeal, only the Baumol-effect receives empirical support.

III.3 Redistributions

III.3.1 A Classification

According to this explanation, the growth of government over the past century is caused by the increasing redistributions towards interest groups, particularly via extending income transfers. There exist several ways to classify these redistributions. Lindbeck [1985, pp. 309-10], for example, employs a useful classification that distinguishes among four general types of redistributions:

(1) broad horizontal redistributions;
(2) life-cycle and insurance-type redistributions;
(3) vertical redistributions; and
(4) fragmented horizontal redistributions

Broad horizontal redistributions are redistributions among broad socioeconomic groups, regardless of the place of the beneficiaries in the distribution of income. Examples of these kinds of redistributions are agricultural protectionism (when it started at the end of the nineteenth century in Europe), rent control and support of home-owners. These policies are mostly realized via tariffs, price and wage regulations, exchange rate adjustments and tax concessions. They do not imply a rapid growth of government expenditure, although administrations have to be built up in order to register these redistributions.

Life-cycle and insurance-type redistributions are redistributions for given individuals, dominated by social security systems. They constitute an important source of the expansion of the public sector in the form of transfer payments during this century in every Western country. Again, resources need to be devoted to administer these redistributions and to check the amount of cheating, particularly with unemployment and illness insurance systems.

Vertical redistributions are explicitly designed to modify the distribution of income in a society. These redistributions are in part established through extending transfer payments to low-income groups. The subsidization or public provision of special goods

and services is another instrument to reach this goal. The tax system has also been frequently employed to change the distribution of income, particularly via progressive income tax rates, special deductions, exemptions etc. Vertical redistributions, too, entail substantial expansions of public budgets.

Fragmented horizontal redistributions are provided regardless of the position of the beneficiaries in the distribution of income. They include all kinds of transfers and subsidies extended to a great number of interest groups. These redistributions have become more important in recent decades as Western democracies have evolved into pluralist societies with large numbers of interest groups.

III.3.2 Unorganized and Organized Interests

The redistributions outlined above did not discriminate between unorganized and organized interests. This sub-section structures redistributions along these lines.

a. Unorganized Interests

The paper by Denzau and Munger [1986] showed how unorganized interests get represented in the USA. Their conclusion can be pushed even further if politicians are less dependent on organized interest groups for campaign contributions and the like. Then the beneficiaries of redistribution policies do not have to be well organized, or indeed organized at all. It is enough that the groups of voters that benefit from redistributions are easy to identify by the politicians, and that the beneficiaries can easily identify the politicians who support the benefits. Obviously, the politicians have the initiative in this process. They compete with each other for votes, and in doing so they act like political entrepreneurs to serve groups of unorganized voters [Schumpeter, 1943, ch. 22; Wagner, 1966].

Several attempts have been made to model these redistributions formally and to provide empirical tests. Meltzer and Richard [1978, 1981, 1983] have developed *"A Rational Theory of the Size of Government"* and have provided some empirical support for this theory. They assumed that the only function of government is to provide (vertical) income redistributions. A crucial variable in their model is the relation of mean income to the income of the median voter. Generally speaking, the distribution of

income is skewed to the right, which implies that mean income is greater than the median income. Consequently, there exists an incentive for politicians to redistribute income to the median income earner financed by (net) taxes on incomes that are above median, assuming that the median income earner is also the median voter. They conclude that:

> "The principal reasons for increased size of government implied by the model are extensions of the franchise that change the position of the decisive voter in the income distribution. An increase in mean income relative to the income of the decisive voter increases the size of government" [Meltzer and Richard, 1981, p. 914].

There are at least two problems with Meltzer and Richard's well-known theory of government expenditure growth. First, extensions of the franchise lead to an increase of voters with income below mean. By consequence, the new median voter has a lower income, and the former median voter is worse off because of the redistributions assumed by the Meltzer-Richard model. In traditional neoclassical theory, the former median voter would therefore not approve an extension of the franchise under majority rule. Mueller [1987] signals this problem and states:

> "If the size of government is endogenous to a political system that uses majority rule and the median voter theorem is applicable, then the extension of suffrage "cannot" be endogenous to the same political system" [Mueller, 1987, p. 127; quotation-marks MDV].

Second, the model implies that increasing inequality of income is a cause of public sector expansion. However, Tullock [1983] argues that the dispersion of income in the USA after World War II has not changed a great deal. Therefore, it seems unlikely that this variable offers a full explanation of government expenditure growth.

Peltzman [1980] has also written an important article about the growth of government. His model assumed too that the only function of the government is to provide (vertical) redistributions of income. Contrary to Meltzer and Richard, Peltzman asserted that the increasing equality of income (brought on, for example, by the spread of education) has caused the growth of government. For not totally obvious reasons he claimed that a more equal distribution of income strengthens the bargaining position of potential supporters of a candidate. Hence, a politician who competes for votes must

promise a greater amount of redistribution toward the voters the more income differences are leveled, resulting in government growth. Interestingly, Peltzman found empirical support for his proposition too.

b. Organized Interests

Many groups that receive redistributions are well organized. It is a common feature of political life (most clearly found and extensively studied in the USA) that these interest groups engage in lobbying among political representatives and donate their votes along with votes-producing campaign contributions. Since the previous chapter has already elaborated on this process, the discussion on organized interests can be brief.

In a theoretical paper, Weingast, Shepsle and Johnsen [1981] addressed the role played by interest groups in bringing about inefficiently large government projects and programs. Mueller and Murrell [1985, 1986] made an empirical contribution in this field. They used OECD data for 1970 to test the proposition that the size of government is positively related to the number of organized interest groups. One of the main conclusion of their work was that:

> "The consistent positive relationship between the number of interest groups and the size of government observed with changing sets of included independent variables, changing samples of nations, and treating the number of interest groups as exogenous or codetermined, does imply rather unequivocally that interest groups are able to influence public policies in such a manner as to lead to increased government size" [Mueller and Murrell, 1986, p. 140].

Thus, unorganized and organized interest groups can be considered to cause government growth. The next sub-section turns to the bureaucracy which is often regarded as a particular interest group.

III.3.3 Bureaucrats; A Particular Interest Group

The bureaucracy can be viewed as an interest group with much influence. Bureaucrats are very well informed about public policy in general, and because of this, they are able to redistribute income to themselves. In doing so, they could constitute an independent force behind the growth of government. Probably the most cited book in

this area is Niskanen's *"Bureaucracy and Representative Government"* [1971]. Migué and Bélanger [1974], Breton and Wintrobe [1975, 1982], Borcherding [1977], Fiorina and Noll [1978], Romer and Rosenthal [1978, 1879, 1981] and Miller and Moe [1983] among others have criticized and extended Niskanen's work in several directions.

Niskanen postulated that bureaucrats will try to maximize their budgets. They desire a budget as large as they can possibly get the legislature-executive entities to approve of. The reasons for this kind of behavior seem almost obvious. Salaries, perquisites of office, power and prestige are all positively related to the size of a budget. Also, promotions are much more rapid in an organization that is increasing in size than in one that is remaining stable or declining in size. Moreover, monitoring is more difficult in larger organizations than in smaller ones. Niskanen then makes the case that bureaucrats have an advantage over legislators in terms of available information about the costs of public programs. They will act like discriminating monopolists and will mislead the legislators and executives about these costs. As a result, higher budgets will emerge in this theory.

It is hard to assess empirically the proposition that bureaucrats cause government expenditure growth. One path to follow is to compare the costs of measurable outputs of government spending with the private sector. Orzechowski [1977] surveyed the evidence suggesting that removal of an activity from the private sector to the public sector will double its unit costs of production. Borcherding, Pommerehne and Schneider [1982] provided ample empirical proof that private firms are more efficient in supplying certain services than their public sector counterparts.

It is worthwhile to discuss Romer and Rosenthal's [1978, 1979, 1982] work in some detail since their model is more explicitly concerned with the growth of government than the other extensions of Niskanen's theory. The authors developed and tested a model (for local governments in the USA) in which bureaucrats forced larger budgets on the median voter. Their model focused particularly on the monopoly power of bureaucrats over the alternative expenditures available to the political decision-makers, legislators and voters. They concluded that monopoly power in the form of controlled agendas caused public spending to be higher than preferred by the median voter. Their idea is the following.

If the agenda setter has monopoly power, voters can be confronted with a choice

between, for example, two expenditure possibilities. The first one is determined by the agenda setter. He will propose an expenditure level that is higher than the most preferred level of the median voter. In addition, the setter will not choose a level too much above this ideal point. The second possibility is called the reversion expenditure position that prevails if voters reject the setter's proposed alternative. It is institutionally determined by law, and is not subject to the setter's control. If the reversion point is below the most preferred level of expenditures of the median, the median voter can be induced to vote for the setter's proposal. Hence, public spending is higher than the predicted median voter outcomes. Romer and Rosenthal found empirical support for their proposition in school districts of Oregon (USA).

III.4 Concluding Remarks

The literature investigated in this chapter, focuses on the growth of public spending during the past century in the Western World. In these theories, no attention is given to the increasing regulatory power of the government.

The theories of government expenditure growth are considered as extensions of the theories that explain the economic role of modern states. The first general explanation for the growth of government - public goods - is based on the market failure approach to the state. From this explanation only the Baumol-effect has empirical support. The second general explanation for the growth of government - redistributions - is based on the interest group or rent-seeking view to the state. Redistributions in the form of transfer payments are particularly important in this context. The role of unorganized and organized interest groups (including the bureaucracy) are considered. Although some issues (e.g. "Meltzer and Richard versus Peltzman") remain unclear, there also exists empirical material supporting this second explanation.

Not surprisingly, both general explanations remain incomplete. The public goods explanation does not consider the redistributive nature of modern societies and neglects therefore the rise in transfer payments extended to various interest groups. The redistribution explanation does not give attention to the possible efficiency enhancing policies of the state and disregards therefore the increasing provision of public goods.

This study attempts to combine both explanations by incorporating economic

history, transaction costs theory and property rights theory in the analysis. Before formulating such a framework, the next chapter reconsiders first the theories of government.

CHAPTER IV

THE THEORIES OF GOVERNMENT RECONSIDERED

IV.1 Introduction

As chapter II pointed out, an entirely equal distribution of political influence in a society prevents groups from gaining control of the state. The central postulate of the market failure approach - the state is an organization which serves the public interest by improving on the market outcome - is applicable in this context. However, this is no longer the case if the distribution of political influence is highly unequal. The state depends then for its support on a few principals. They will use the government to extract rents from the rest of the constituency regardless of the impact on the income of the society as a whole. These Mafia-type states can be observed in many Third World countries today.

Considering the Western World, there are two aspects worth mentioning in this respect. On the one hand, it is obvious that the distribution of political influence is not completely equal in the Western societies. Groups with many resources are often able to exert more political influence than other groups, and therefore their interests are better represented.

On the other hand, the state in the Western World does not seem to resemble the Mafia either. Political power is not in the hands of a few principals who control the government and secure their rents regardless of the efficiency implications for the total societal income. In general, political resource allocation is not realized through personalistic relationships, bribery, racketeering etc. in the these countries[1].

It is hard to pinpoint where the modern state is situated on the continuum from the organization that only serves the public interest to the Mafia-type governments of many Third World countries. Clearly, Western states correct market failures *and* serve

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[1] To some extent, Japan may be considered as an exception to this rule.

special interest groups. This suggests that a combination of the market failure theory and the interest group theory would provide a compelling explanation for the economic role of the state. However, such an integrated approach would still be too circumscribed to deal with the issues of this thesis.

In order to account for the economic role of the state, it is important to recognize that the state specifies and enforces property rights which are the underpinnings of economic performance in a country. The link between property rights and the efficiency of an economy was argued in a seminal paper by Coase [1960], which is the subject of the next section.

IV.2 Walras Versus Coase

In order to analyze Coase's argument, it is best to start with the main features of the Walrasian general equilibrium model in which the distribution of property rights does not play a role with respect to the allocation of resources in the economy. Following a standard microeconomic textbook like Varian [1984, ch. 5], the main assumption underlying this model is that the economy consists of competitive markets where all agents behave as price-takers. Walras explained that in such an economy an equilibrium exists in which there is no good for which there is an excess demand. This is called a Walrasian equilibrium. Assuming that all goods are desirable, a Walrasian equilibrium also implies that no good can be in excess supply. Entirely flexible prices make all markets clear, i.e. the equilibrium is characterized by the equality of supply and demand in every market.

It is well-known that the outcome of this general equilibrium model is Pareto-efficient. Needless to say, this outcome does not imply an optimum in the sense of "fairness". The result depends entirely on the original distribution of endowments in the economy. Moreover, it is worth mentioning that economic growth is not a problem in this neoclassical account. Roughly speaking, it is simply a function of the income saved and the growth rate of population in a society[2].

As chapter II indicated, Coase claimed that competitive markets are not

[2] See North [1981, ch. 1] for an elaboration on this argument.

necessarily required for achieving Pareto-efficiency. If nothing obstructs bargaining, people affected by an externality will get together and negotiate their way to a Pareto-efficient solution, regardless of any prior assignments of property rights. Zero transaction costs with respect to the rearrangement of legal rights is, according to Coase, the main assumption for obtaining Pareto-efficiency, not competitive markets.

The essence of Coase's paper is that in the presence of transaction costs such rearrangements may not occur and that, consequently, the initial distribution of property rights does influence whether or not Pareto-efficiency in an economy is attained. It is worth reading again.

> "Once the costs of carrying out market transactions are taken into account it is clear that such rearrangement of rights will only be undertaken when the increase in the value of production upon the rearrangement is greater than the costs which would be involved in bringing it about. When it is less, the granting of an injunction (or the knowledge that it would be granted) or the liabilities to pay damages may result in an activity discontinued (or may prevent its being started) which would be undertaken if market transactions were costless. *In these conditions the initial delimitations of legal rights does have an effect on the efficiency with which the economic system operates.* One arrangement of rights may bring about a greater value of production than any other. But unless this is the arrangement of rights established by the legal system, the cost of reaching the same result by altering and combining rights through the market may be so great that this optimal arrangement of rights, and the greater value of production which it would bring, may never be achieved" [Coase, 1960; italics MDV].

Coase's argument was primarily meant to challenge Pigou's treatment of externalities. The Coase theorem has more general implications though. It is not just transaction costs with respect to the internalization of externalities that may prevent Pareto-efficient solutions to prevail. All transaction costs pertaining to the entire exchange process of an economy may obstruct efficiency. What one needs to assume to obtain Pareto-efficiency implied by the Walrasian general equilibrium model, is that the economy operates without any transaction costs. This means that one must maintain the assumptions that:

(1) the goods and services exchanged in the economy are uni-dimensional, i.e. they do not have diverse valued attributes;
(2) the exchange process is similar to an auction market, i.e. trading is instantaneous and concentrated at a single point in space; and

(3) the parties involved have perfect information about the goods and services exchanged, the terms of trade, supply and demand functions etc.

If these assumptions are satisfied, no resources have to be allocated to measure the multiple valued dimensions of goods and services, to draw up a contract, to acquire information, to police agents, to enforce agreements and so on. In such a world, total transaction costs are equal to zero, and property rights only affect the distribution of income in a society.

It is obvious though that the zero transaction costs postulate is violated in the real world. Resources do have to be allocated to transact. Following Coase, this implies that the institutional structure of an economy (defined as the distribution of property rights) constitutes a critical determinant of the way in which resources are allocated. The next section elaborates on this implication and provides some brief historical examples to illustrate it[3].

IV.3 The State, Property Rights and Economic Performance

Coase's article had considerable influence on those economic historians who are primarily concerned with offering explanations for the development of economic performance of countries through time. For example, in North and Thomas [1973], North [1981] and perhaps most explicitly in North [1990] a property rights approach has been developed in order to account for economic performance of nations through history. This section is based on these contributions.

IV.3.1 Outline

A useful starting-point for the property rights approach under study is the so-

[3] The essence of the Coase theorem has been expressed very nicely by Dahlman [1979, p. 161]: "In the final analysis, therefore, externalities and market failures are not what is the matter with the world, nor is it externalities and market failure that prevents us from reestablishing the Garden of Eden on earth - our sad state of affairs is rather due to positive transaction costs (...)".

called impersonal exchange process which is typical for most economies. The economic subjects that take part in this exchange process do not possess personal knowledge about each other. There are no repeat dealings among a large number of individuals, and the distance in time or space between the purchase, payment and delivery of a good or service can be considerable. Also, the goods and services exchanged and the performance of agents involved are characterized by many valued dimensions or attributes.

In this impersonal exchange process, the private return on cheating, opportunism, shirking, loafing etc. increases (compared to personal exchange). Therefore, participants in this process invest resources in order to minimize the consequences of non-cooperative behavior so that the gains from exchange can be captured. For example, resources are devoted to purchase insurance, to establish brand names and guarantees, and to develop elaborate monitoring systems. More important, the pay-offs for devising formal contracts are considerable in this context. These contracts can determine with great precision the terms of an agreement between private parties and underlie economic exchanges.

At this point the state comes in, since a prerequisite for private contracting is a state which specifies and enforces a set of property rights. History shows that it has not been possible to capture the benefits from exchange in anarchy. There are no examples of societies that realize the potential of technological progress resulting from specialization and division of labor without a third party (with a comparative advantage in violence) which establishes these fundamental rules. In addition, the state is needed to provide third party enforcement of increasingly complex forms of private contracts. In this respect, the state can be considered as a *necessary condition* for achieving development or economic growth.

A state that specifies and enforces a set of property rights and provides third party enforcement, if a party does not live up to a contractual agreement, is not a *sufficient condition* to attain development or economic growth in a country. Other important factors are the kinds of property rights that are established, and the way in which third party enforcement is provided.

Development or economic growth requires a set of efficient property rights, i.e. rules that broadly encourage people to engage in productive activities. The property rights approach at hand claims that these rules should not only contribute to the traditional allocative efficiency within the economy, but to the adaptive efficiency as well.

This second type of efficiency means, that a framework is needed which is tolerant to the acquisition of knowledge and learning and embodies incentives for risk-taking, inventions, innovations and creative activities of all sorts[4].

In addition to this, the state has to settle disputes in an impartial and effective way. More specifically, impartial and effective bodies of law, courts and credible commitment to the rules, established on the part of political entities, are assumed to be critical determinants of economic progress in this approach.

IV.3.2 Some Brief Historical Examples

The link between the state, property rights and economic performance as outlined above can be illustrated by a few examples from economic history. It is usually taken for granted that the state creates the aforementioned framework which is conducive to economic growth. However, except for the Ancient era where a large amount of wealth was accumulated in political units like Mesopotamia, Egypt, Greece, Rhodes, and the Roman Republic and Empire, most states in history failed to provide the underpinnings for productivity encouraging activities. And, even in the developed world, it is by no means certain that a state will continue to establish a framework that promotes economic growth. Argentina, for example, experienced a relatively high per capita income at the beginning of this century. Now, this country faces a standard of living which is among the lower ones in the industrialized world.

The reason why states have often failed to specify and enforce a set of productive rules is straightforward. Because the distribution of violence potential among principals has been highly unequal throughout history, some groups gained control of the state and changed the rules to suit their own interest, regardless of the efficiency implications for total societal wealth. Most parts of history show that this struggle for extraction of rents by groups, resulted in rules which promoted redistributive activities rather than productive ones.

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[4] The criterion of adaptive or dynamic efficiency is especially emphasized in the writings of Schumpeter [1943, ch. 8]. For related issues, see Baumol [1990] and Murphy et al. [1991].

The application of the property rights approach at hand to the emergence of "representative" governments in Europe is important for this study. The starting-point is the growing cost of warfare in late medieval Europe which caused a fiscal crisis in each state. Following North's approach, in order to obtain more revenue, an exchange process evolved in which rulers gave several constituents some rights for levies and taxes in return. Those constituents wealthy enough to be taxed organized themselves into representative political bodies. They favored policies far removed from arbitrary confiscation or alterations of property. The Dutch States General and the British Parliament effectively succeeded in curbing the Crown's authority and enacted legislation that resulted in the growth of trade and commerce. A set of property rights were specified and enforced that provided incentives to use factors of production more efficiently (allocative efficiency) and to direct resources towards inventive and innovative activities (adaptive efficiency). As a result, both the Low Countries and England experienced sustained economic growth and escaped the Malthusian crisis (i.e. a crisis invoked by a growing population which outstrips the economy's ability to support it) of the seventeenth century[5].

The representative political bodies that emerged facilitated the exchange process between the ruler and (a small section of) the constituents. The ruler received additional revenues and the representatives enacted laws that secured their private property rights and enabled them to realize the increased opportunities for gaining profit.

The British carried these rules over to the New World. Hence, a set of efficient property rights were established in this area too. In addition, the "Founding Fathers" erected a constitution that made it very costly for groups to redistribute wealth and income through the government. The United States Constitution embodied a political structure - the executive branch (federal, state and local administrations), the legislative branch (the House of Representatives and the Senate); and the judicial branch (courts) -

[5] In Spain and France just the opposite occurred. The Cortes and the Estates General, respectively, did not effectively curb the Crown's authority. A set of property rights evolved that only encouraged socially less-productive activities. In consequence, both Spain and France suffered from the Malthusian crisis of the seventeenth century.

that was explicitly designed to prevent domination by factions[6]. This so-called Madisonian system of checks and balances is usually seen as the basis for the growth of the North American economy during the nineteenth century.

IV.4 Concluding Remarks

Both the market failure theory and the interest group theory do not explicitly address the state's role in specifying and enforcing property rights. In a positive transaction costs world, however, the property rights structure constitutes a critical determinant of the allocation of resources in an economy.

In this context, a state that establishes property rights is a necessary condition for achieving economic development. As can be illustrated by some brief examples from economic history, particularly important is the state's role in contributing to the adaptive efficiency in the economy, that is with providing a framework which broadly encourages people to engage in productive activities.

Keeping this reconsideration of government in mind, it is time to turn to the central objective of this thesis, which is to explain and appraise the *growth* of government in the Western World over the past century. This is the topic of the next chapter.

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[6] In this context, see Madison's Federalist Paper Number 10 [Hamilton, Madison and Jay, 1788].

CHAPTER V

THE THEORIES OF GOVERNMENT GROWTH RECONSIDERED

V.1 Introduction

Wagner's Law of Increasing State Activity has been dismissed in chapter III, as this proposition is considered to be flawed by theoretical and empirical difficulties. The main disadvantage mentioned in the (positive) Public Choice literature on government growth, is that Wagner's Law essentially describes the growth of government, without actually offering an explanation for it.

Nonetheless, Wagner's prediction, that the level of economic development and the scope of government are positively correlated, became almost a stylized fact in economic theory. Indeed, it is well-known that the public sector is much smaller in low income countries than in high income countries. For example, in the mid sixties, the average of total taxes and social security contributions (a proxy for the size of government) in the eleven poorest countries in the world amounted to 11.8% of GNP. In the eleven richest countries of the world this index reached 36.9% of GNP[1].

It seems, therefore, worthwhile to concentrate on the empirical phenomenon that economic development and government size are positively correlated. The hypothesis of this study is that the course of economic development starting at the end of the nineteenth century *caused* the growth of government in the Western World. Before analyzing this hypothesis, it is useful to describe the development of the growth of government in some detail.

V.2 Description of the Growth of Government

Government (defined and measured below) has grown *throughout* the Western

[1] The figures are taken from Aharoni [1977].

world during this century. There are no examples of Western countries in which the government has not grown. Approximately one hundred years ago, many Western governments still resembled a so-called night-watchman state, which was mainly concerned with preserving law and order. Nowadays, all Western governments undertake a wide variety of other economic activities as well.

The growth of government has not been an identical development in the whole West. Many differences exist between countries with respect to the extent in which government has grown, its specific shape, its short-run timing and so on. Important though, is to emphasize again that the share of activities undertaken by the government has grown in all Western economies in the twentieth century.

There are many ways of categorizing these activities of modern states. For example, in his seminal work *"The Theory of Public Finance"*, Musgrave [1959] distinguishes among three roles of the government in the economy: allocation, redistribution and stabilization. Although this classification is not incontestable, it at least throws some light on the actions undertaken by the modern state, and will be used in this sub-section.

The allocation function refers to the satisfaction of social wants, which necessitates the government to provide certain goods and services and to impose taxes in order to finance these outlays. The redistribution function concerns the adjustments in the income distribution which results from market activities, requiring the government to increase some incomes by providing income transfers or tax cuts, and to decrease other incomes by imposing taxes. The stabilization function, calls for deficit finance under conditions of unemployment and depression, and for surplus finance under conditions of full employment and inflationary pressure. Obviously, these three functions of government are interrelated. Programs undertaken to reach one objective may reinforce or impede the realization of the other objections.

It is useful to discuss these three functions of government in relation to the growth of government. The government has played an increasingly important role in allocating resources within the economy. Resources directly allocated by the state have expanded dramatically over the past century. One might point to the supply by the state of private goods like education, health care, fire protection and social security. Also, one might think of the provision of public goods such as national defense, police departments and

court systems. Additionally, the state has affected the resource allocation by intervening in the market. Examples are tariffs, quotas, restrictions on entry, subsidies, price supports, wage controls, and so on. These interventions or regulations entail a modest increase in public expenditure. However, they imply a rather important shift of the power over property rights and rule-making from voluntary organizations to executive departments and regulatory agencies of the government.

The corrections of the state in the distribution of income that is determined by the market are in part realized by initiating and expanding a wide variety of income transfer programs and in-kind benefits, for example, health care and housing assistance. Another important instrument in the redistribution of income is the tax system. The personal income tax in particular has been used to restructure the income distribution via progressive marginal rates, exemptions, special deductions etc. These activities resulted in the emergence of the so-called Welfare State after World War II. Needless to say, the provision of private and public goods by the state and the interventions in the market have redistributive objectives and/or implications as well.

The stabilization policy became an important phenomenon after World War II. The Keynesian revolution raised the opinion among policy makers that the state is able to maintain the economy at full employment. In fact, implementing the Keynesian recommendations resulted most of the time in deficit policy, entailing an increased level in public goods, private goods and income transfers[2].

Since all three mechanisms resulted in a higher level of government spending, the state needed more revenues in order to finance these activities. This was accomplished mainly through personal income taxes, corporate income taxes and so-called unemployment/social security taxes. Roughly speaking, these taxes were introduced around the beginning of this century, and have expanded drastically in subsequent years.

Obviously, one would like to assess the overall involvement of the state in the economy quantitatively. Unfortunately, no index exists that could serve as a reliable basis for measuring the overall size of government in all its significant economic dimensions. One cannot concentrate government activities in a single measure that can be precisely

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[2] For an outline on federal deficit and national debt policies in the USA, see Anderson [1987].

observed.

For empirical analysis, however, a quantitative measure is indispensable. Customarily, the size of government is approximated by the ratio of government expenditure to gross national product (or gross domestic product or gross national income). Many of the theories outlined in chapter III focus explicitly or implicitly on this ratio. This index, however, only measures the proportion of resources directly allocated by the government. The remainder of this section discusses how this index and related indices have grown over the past years, not only in the USA but in other countries as well. The public expenditure data are presented in several tables, which can be found at the end of this chapter.

Table 5.1 shows how total government spending (as a percentage of GNP) and several expenditure categories (as a percentage of total government spending) have evolved between 1902-70 in the USA. It is clear that the proportion of GNP going through the government has increased throughout this period. In addition, it is worth pointing out that during this century, defense spending has dominated public expenditure in the USA. The comparative importance of military expenditures during the first half of the twentieth century reflects in part the involvement of the USA in World Wars I and II. After the Second World War, the high level of defense spending could be associated with the Cold War and with the increasingly significant political/diplomatic role of the USA in international affairs. A final point to be made concerns the drastic increase of transfer payments that started during the Great Depression. Until 1927, most public expenditures were attributed to defense, education and other categories, such as the financing and operating of government companies. In subsequent years, public welfare expenditures and social security benefits also became important public spending categories[3].

Table 5.2 provides information about the size of the public sector in the OECD countries in 1982. This table illustrates the statement made above that the growth of government has not been an identical development in all Western countries. In fact, the

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[3] In 1980 and 1986, total government spending in the USA reached 35.1% and 40.0% of GNP, respectively [United States Department of Commerce, 1983, p. 273; United States Department of Commerce, 1989, pp. 268, 428].

differences are quite dramatic. According to the measure at hand, Switzerland, Spain and Japan have the smallest public sectors, accounting for approximately one third of gross domestic product (GDP). In contrast, government expenditures in Sweden, Netherlands and Denmark are above 60% of GDP in 1982.

Table 5.3 presents data about government spending divided into defense, transfers and nondefense, nontransfer expenditures as a percentage of GNP in the USA and (the average of) fifteen developed countries in 1953/54 and 1973/74. An interesting aspect about postwar government growth can be inferred from this table. Nondefense, nontransfer expenditures dominated transfer payments in the USA during the early fifties. In the fifteen developed countries, nondefense, nontransfer expenditures were only marginally higher than transfer payments. In all countries, nondefense, nontransfer expenditures increased in the following two decades, although less rapidly than transfers.

A textbook example of a country in which transfer payments became very important after World War II, is the Netherlands. Table 5.4 outlines the major income transfer programs in this country as a percentage of GNP during 1965-83. The data indicate the emergence of what may be labeled as one of the most advanced Welfare States in the world. Partly because of increasing generosity and expanding eligibility, income transfers almost tripled during this period and reached approximately 30% of GNP in 1983[4].

It is clear that the above cited public spending data provide interesting insights into the way in which the amount of money spent by governments has grown. Obviously, these illustrations can be multiplied, but all elucidate that the proportion of national income going through Western governments has grown during the period under study. Also, additional public spending figures can be used to evaluate a state's redistribution and stabilization policies. Several caveats, with respect to public spending date, are worth emphasizing though.

Caution is required when the public expenditure/GNP ratio is used to compute series of decade averages or trend-rates of change. These numbers often suggest a smooth and steady development of government growth, ignoring evidence that the growth

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[4] Transfers remained around 30% of GNP in the Netherlands during 1983-1990. See Netherlands Ministry of Finance [1990, p. 303].

of government has been a discontinuous process in all Western countries, occurring with stops and starts [Higgs, 1987].

Also, fluctuations in GNP may confuse information about the growth of government. For example, the extraordinary jump in public expenditure as a percentage of GNP in the USA during 1927-32 was a result of a drastic fall in GNP rather than an extraordinary rise in public spending [Wallis, 1984].

Moreover, public expenditure figures are not as precise and reliable as one would expect them to be. For example, serious accounting problems (e.g. the repeated shuffling of expenditures between on-budget and off-budget status) make federal budget figures in the USA unsuitable in constructing an accurate picture of the fiscal history of this country [Boskin, 1987].

A more serious drawback is the fact that the indices presented do not account for the extent in which the resource allocation is affected by government interventions or regulations. This is a serious omission, since the increasing regulatory power of the state is an important component of the growth of government. It seems therefore appropriate to provide some figures of this development.

The intensity with which the economy is regulated is a concept which, under certain assumptions, can be made operational and accessible to measurement. Christainsen and Haveman [1981] constructed three indices of regulatory intensity for the postwar period in the USA: (1) the cumulative number of "major" pieces of regulatory legislation in effect during any of the years in question, (2) the volume of federal expenditure on regulatory activities and (3) the number of full-time federal personnel engaged in regulatory activities. Setting the index base at 100 in 1947, the first index attained a level of 402 in 1977, while the second and the third reached 1004 and 668, respectively. The authors contend that the indices generally implied a monotonic increase in regulatory intensity during the 1947-77 period.

To summarize this description, three features are worth emphasizing. First, the state expanded its role in allocating resources via the provision of public and private goods and via market interventions or regulations as well. Second, income transfers and in-kind benefits were provided by the state to change the distribution of wealth and income. Third, the state's stabilization policies mostly implied higher levels of public spending (deficit finance) in order to stimulate effective demand.

V.3 Determinants of the Growth of Government

V.3.1 Specialization and Division of Labor

According to Smith [1776], the key difference between low developed and highly developed countries is the degree of specialization and division of labor. Poor nations are characterized by a relatively low level of specialization in production and employment. Production processes are mostly organized on a small scale and technological advances are limited by the size of the market. In contrast, rich countries experience a relatively high level of specialization and division of labor, entailing large-scale production processes, along with continuous technological change.

As is argued by North [1981, ch.11], the structural transformations in early modern Europe (1450-1650) towards more efficient property rights provided the conditions for increasing specialization and division of labor in the Western World over the past three centuries. Better specified and enforced property rights enlarged the size of the market which consequently spurred improvements in technology. In addition, technological progress was encouraged by higher private rates of returns on innovations brought on by systematic property rights over new techniques (e.g. patents).

North [ch. 13] continues his argument by explaining that during the second half of the nineteenth century, these developments evolved in the "wedding of science and technology", i.e. the systematic use of scientific knowledge in the process of developing new technologies. The consequent "elastic supply curve of knowledge" made it possible to produce new knowledge at constant costs. This caused an acceleration in the rate of specialization and division of labor, entailing economic growth.

The remainder of this section addresses the consequences of increasing specialization and division of labor for the growth of government. It is appropriate to point out at the outset that the account offered here deals only with the long-term trend of the growth of government. As was mentioned in chapter I, explaining the distinctions between Western countries with respect to, for example, size, short-run timing and specific shape of government growth will not be not be pursued in this study. The consequences in the sphere of taxation are discussed first.

V.3.2 Taxation

Until around the turn of the century, the assessment, collection and monitoring of taxes on wealth and income was very costly to all governments. As a result, the bulk of the state's revenues consisted mainly of tariffs, property taxes, custom duties, excises, license fees etc. since these kinds of levies were relatively easy to realize. The acceleration of specialization in production and employment and the consequent growing share of production occurring in the marketplace had two important effects in the context of financing public expenditures: (1) the tax-base expanded and (2) the efficiency of taxation improved [Kau and Rubin, 1981; North, 1985]. This can be explained as follows.

Traditionally, many goods and services were produced in the home [Becker 1965, 1981]. The time women spent to keep the household is an important example of home-production. In addition, the family used to be an organization that provided services like education and insurance. Also, one purchased inputs from the market in order to make furniture, do repairs around the house, grow vegetables etc. Increasing specialization and division of labor raised the opportunity cost of time spent on these non-market activities. In other words, in a more specialized economy it becomes less costly to buy these goods and services on the market instead of producing them at home. This means that more production will occur in the marketplace which increases the tax-base and therefore the government's possibilities for taxation[5].

Growing market production entailed an increasing number of people that earned an income in the market sector. Moreover, increasing specialization in production and employment resulted in more sales and more firms. Improved record keeping by corporations with regard to salaries, sales and profits made it rather easy for the state to tax personal income, sales and corporate income. The costs of assessment and collection of taxes could partly be shifted from the government to merchants and employers. This shift, along with better techniques of monitoring compliance, increased the efficiency of taxation by the state.

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[5] People also turned to the government for the provision of services such as education and social insurance. This will be analyzed later in this chapter.

Table 5.5 details total revenues as a percentage of GNP and revenues by source as a percentage of total revenues in the USA for selected years between 1902-70. The state's enhancing ability to extract resources from the constituency is reflected by the rise of the personal income tax, the corporate income tax and the unemployment/social security tax. The importance of property taxes has declined drastically. The fall in sales taxes is mainly a result of the decrease in tariffs. On the local and state level, however, this revenue source remains very significant[6,7].

The growing share of production occurring in the market and the consequent widening of the tax-base, along with the increasing efficiency in assessing, collecting and monitoring taxes, form a *necessary condition* for the growth of government. It is hard to imagine how the state would have been able to finance its expanding supply of goods and services without the aforementioned new revenue sources. However, these factors do not constitute a *sufficient explanation* for the growth of government. In order to complement the argument, one has to take into account how increasing specialization and division of labor has affected the demand for government. This task is taken up in the next three sub-sections.

V.3.3 Government Transaction Services

It is important to restate that the exchange process under study entails positive transaction costs, as can easily be illustrated. An exchange in the marketplace usually requires the acquisition of information with regard to the relevant prices, the person who one wishes to deal with, and other issues. In addition, market exchanges often necessitate the measurement of several attributes of goods and services, the specification of a contract, the purchase of insurance and so on. Within governmental and non-governmental organizations resources are invested to integrate and coordinate complex

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[6] In many European countries, sales taxes remain also very significant revenue sources.

[7] In 1980 and 1986, total revenues in the USA reached 34.1% and 35.7% of GNP, respectively [United States Department of Commerce, 1983, p. 273; United States Department of Commerce 1989, pp. 268, 428].

processes. Also, the performance of agents has to be monitored in order to prevent shirking, loafing etc. Furthermore, there is a need for establishing property rights and additional rule-making, along with enforcement mechanisms that undergird all these exchanges.

It is not difficult to see that increasing specialization and division of labor causes transaction costs to rise in an economy. One might think of at least the following three reasons.

First, increasing specialization and division of labor entails an expanding number of exchanges in the economy since more (specialized) people participate in the market. More exchanges imply an increasing demand for information, measurement, contract specification, insurance, rule-making, enforcement etc.

Second, in a highly specialized economy, firms become increasingly complex forms of economic organization. As a consequence, a growing amount of resources needs to be allocated to coordinate and integrate input, production and distribution processes.

Third, rising specialization in production and employment results in more impersonal exchange between participants. As was out in chapter IV, in such a context the private return on shirking, loafing, opportunism, cheating, etc. increases. In order to check these activities, more resources have to be invested to monitor the performance of agents. If agreements are violated, third party enforcement needs to be provided.

Each of these cases illustrates that increasing specialization and division of labor causes transaction costs to grow. Put differently, in an increasingly specialized economy, individuals are induced to devote more resources to perform exchanges. This can be interpreted as an increasing demand for transaction services in the economy. In general, these transaction services are provided within firms, within the market and within the government. This is discussed next.

Many transaction services are provided within firms. Coordinating and integrating activities, along with obtaining and conveying information, is carried out by managers, secretaries, sales workers and foremen. Monitoring performance and enforcement of contracts is usually the concern of foremen and inspectors.

In the marketplace, several industries are explicitly concerned with performing the business of economic exchange. One might think of finance, real estate, and insurance. Additionally, wholesale trade and retail trade engage mainly in the provision of

transaction services[8].

Computations by North and Wallis [1986] indicate that the labor cost of employees who provide transaction services within firms (excluding transaction industries), plus all the resources used in transaction industries on the open market, has grown in the USA from approximately 22% of GNP in 1870 to over 40% of GNP in 1970. Hence, the amount of resources devoted by the private sector in the USA to realizing transactions, almost doubled in terms of GNP over one century. In other words, these figures illustrate a rise in resources absorbed by the components of the US economy that are associated with capturing the gains which come from increasing specialization and division of labor[9].

For the purpose of this study it is important to illuminate that not only the private sector but also the state has played an increasingly important role in providing transaction services. Government transaction services are primarily related to defining, securing and enforcing property rights via legislatures, police departments and courts etc. They are also related to the state's concern with protecting property rights on an international scale via a defense apparatus (and foreign relations).

Obviously, the demand for government transaction services increases when a country makes a transition from a "traditional" society towards a highly specialized economy. However, the increasingly important role of the state in establishing property rights and additional rule-making (e.g. licensing, quality controls and measurement standards) is only very imperfectly reflected in public spending data. Public spending categories associated with the transaction function in the economy such as general administration, justice and public safety have remained relatively small in size (as a percentage of GNP) over this century in the West.

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[8] The next chapter considers these so-called transaction occupations within firms and transaction industries within the market in more detail.

[9] Implicitly, a distinction is made here between resources that are devoted to production and transaction activities. This distinction shows some resemblance with the well-known issue of productive and unproductive labor, which was addressed by the classical school of economists and re-addressed by several Marxian authors. The study mentioned by North and Wallis and this related matter receive more scrutiny in the following chapter.

The comparative advantage of the state over the private sector in providing these transaction services has already been pointed out. A state has been defined in chapter II as an organization with a comparative advantage in violence. Since the essence of property rights is the right to exclude others, the coercive power of the state brings it into a position to establish these fundamental rights, and to provide third party enforcement in case of contract violation among private parties.

V.3.4 Social Overhead Services

Increasing specialization and division of labor also affected the demand for so-called social overhead services. These services include education and transportation services such as highways, airports, harbors, rivers, canals etc. Also urban services like fire protection, hospitals, health services, sanitation and housing are important social overhead services. All of these services have an element of a country's social overhead capital, in the sense that they are part of preserving the existing social order and allow for specialization and division of labor.

To some extent, social overhead services also involve an element of transaction services. For example, an aspect of education is that it informs people about the property rights structure in a society and additional rule-making regarding exchanges. Transportation services play an important role in determining the level of transportation costs within the economy. These costs are in turn crucial in determining the degree of specialization and division of labor, and therefore the level of transaction costs in the economy. Urban services reduce the costs of living in cities, and thereby increase the number of people who can profitably move to urban areas. A large number of buyers and sellers in close geographic proximity enables individuals to realize the gains from exchange at lower transaction costs compared to rural areas[10].

As for government transaction services, it is obvious that the demand for social overhead services rises when a country industrializes and turns into an increasingly urban

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[10] See North and Wallis [1986] for a discussion on these matters.

society. This rise is reflected in public spending data of Western countries. For example, in the USA, public spending on social overhead services increased from 2.8% of GNP in 1902 to 10.3% of GNP in 1970 [North and Wallis, 1986].

The comparative advantages of the state over the private sector in providing these services are, however, not clear. It is often argued that the power to tax constituents enables the state to overcome the free-rider problem, making possible the production of goods and services that are unprofitable for the private sector. This is not applicable though to all social overhead services. The comparative advantages of the government over the market are not obvious, for instance, in the areas of education, health care and hospitals. The market is, to some extent, able to organize the production of these services, as the economies of the USA and the UK among others attest. Nonetheless, even in these two countries the government is heavily involved in providing social overhead services.

V.3.5 Redistributions

An important part of government growth has not yet been accounted for. Increasing specialization and division of labor also increased the number of margins or issues around which potential interest groups could organize themselves. Moreover, the extensions of the suffrage that were realized around the beginning of this century, lowered the relative price of using the political process versus the market, resulting in an increasing demand for redistributions of wealth and income. Put differently, it became less costly for groups to contrive rents through the government compared to realizing personal interests through the private sector[11].

The fact that private groups started to bear the *private costs* of altering the political-legal system, implied the gradual breakdown of several parts of the Madisonian system (see chapter IV) in the USA. Munn vs. Illinois (1877), can be considered as a landmark of this transformation. This Supreme Court decision confirmed that private business "affected with the public interest" were subject to regulation and control by the

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[11] See Demsetz [1982] and North and Wallis [1982] who also used this traditional neoclassical argument.

state of Illinois. The 16th Amendment of the Constitution (1913) legalizing federal income tax is another well-known illustrations of this process in the USA.

It is useful to distinguish among three types of redistributions: (1) market interventions or regulations, (2) social insurance and (3) other income transfers and in-kind benefits. These redistributions are discussed by focusing on the underlying changes in relative prices, brought on by increasing specialization and division of labor[12].

Increasing specialization and division of labor led to drastic improvements in transportation technology (e.g. railroads, steamships) and communications (e.g. telegraphs, cables) which made markets national and worldwide. On the one hand, wider markets meant growing opportunities for realizing profits. On the other hand, wider markets implied more competition. Increased competition induced farmers, producers and manufacturers to lobby among political representatives in order to receive protection from the state. Several forms of regulations were provided. Examples are price supports, price ceilings, import duties, subsidies, and entry restrictions. An acceleration of market interventions occurred during the Great Depression. The state continued to broaden its regulatory power over the economy after World War II [Higgs, 1987].

The consequences of increasing specialization and division of labor for the organization of social insurance have been dramatic. In pre-industrial societies, social insurance was typically provided by the (multi-generation) family and/or the community. Increasing specialization in production and employment, along with the consequent industrialization and urbanization of the society, led to the "breakdown" of these institutions [Becker, 1981]. As a result, it became increasingly costly to produce social insurance at home or within the community compared to the market. However, groups used their increasing political influence to make the government supply several forms of social insurance. In particular, insurance over the life-cycle of an individual such as old-age pensions and insurance for sickness, disability and unemployment have been

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[12] The distinction made is broadly in line with Lindbeck's classification of redistributions outlined in chapter III. The relative price changes caused by increasing specialization and division of labor are also considered in North [1985].

provided by the state[13] .

The view that the government was used in a predatory way to supply social insurance is not unchallenged. The traditional explanations for these programs expounded by welfare economists do not focus on the pressure for redistributions of wealth and income. In this traditional view, emphasis is given to the comparative advantages of compulsory insurance systems over voluntary private insurance systems. One problem of private insurance markets concerns the fact that the demand is likely to be greatest among those who represent the highest risk to the insurer, making the insurance market thin and premiums high. This problem is called adverse selection. In addition, voluntary insurance systems are beset with the well-known problem of moral hazard, which arises from the unobservability of actual behavior after the insurance is effected. Both adverse selection and moral hazard are assumed to be overcome by the introduction of mandatory insurance programs. In other words, according to the welfare economic approach, the state's involvement in social insurance is due to its relative superiority in providing these services.

Proponents of this argument, however, have not supplied conclusive empirical evidence to support their claim. Lindbeck [1985] for instance argues that high-and median income earners with modest risks rather than low income earners with high risks tended to join voluntary insurance systems. Also, it has not been made clear why the problem of moral hazard would be easier to solve by the government than the market. These matters make the view that the state is more efficient in providing social insurance than the market somewhat dubious. Following Fuchs [1983], universal government insurance seems more consistent with the desire to redistribute wealth and income among the constituents.

Furthermore, the improved means of communications resulting from increasing specialization and division of labor reduced the costs for interest groups to organize and

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[13] Bismarck's social policies started before workers became a political force in Germany. This does not necessarily pose a problem for the proposition that social insurance was a result of the pressure to redistribute wealth and income in a society. Workers under poor circumstances could have caused upheaval and consequent political instability. The introduction of social insurance by the state can thus be considered as a way to maintain the existing social order. See, for example, [Rimlinger, 1982].

to lobby among political representatives for transfers. As a result, a rent-seeking process evolved causing upward pressure on government spending, for example in the form of subsidies. Moreover, cheap communication systems such as mass media made each unorganized group easier to reach by politicians. Likewise, mass media reduced the costs for individual voters to identify politicians who would serve their interests. This induced Democrats (in the USA) to initiate a host of income transfers and in-kind benefits such as Aid to Families with Dependent Children (AFDC), Supplemental Security Income (SSI), Medicaid, Food Stamps and Housing Assistance to lower income groups and the poor[14].

As has been mentioned before, market interventions or regulations entail only a modest increase in government expenditure. In contrast, spending on social insurance and income transfers and in-kind benefits makes up an important part of the government's budget. These expenditures became particularly important after World War II, when Western countries turned into Welfare States. Table 5.3 and 5.4 provided some information about this development.

To summarize, in this section it has been argued that the acceleration in specialization and division of labor which resulted from the "wedding of science and technology" in the late nineteenth century, constitutes the underlying force of the growth of government. On the one hand, this development enlarged potential revenues of the state. On the other hand, it increased the demand for government transaction services, social overhead services and redistributions of wealth and income.

V.4 Concluding Remarks

The growing share of economic activities undertaken by the government contains three components, namely (1) an expansion in allocating resources via public and private goods, and market interventions or regulations as well; (2) redistributing wealth and income via transfers, in-kind benefits and other instruments; and (3) stabilizing the economy, particularly via deficit finance.

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[14] Note that programs like Food Stamps and Housing Assistance may also benefit farmers and constructors, respectively.

The explanation for the growth of government centers on the "Wealth of Nations", i.e. on increasing specialization and division of labor. This process accelerated after the "wedding of science and technology" at the end of the nineteenth century in all Western countries.

The increasing degree of specialization and division of labor enlarged the tax-base, and made taxation more efficient. This enabled the state to finance its expanding operations. Increasing specialization and division of labor also increased the demand for government transaction services (particularly specifying and enforcing property rights) and social overhead services (particularly education, transportation services and urban services). Moreover, this development increased the number of issues around which potential interest groups could organize themselves. After the extensions of the suffrage, the locus of private investment of resources gradually shifted into attempts to favorably influence the state, resulting in many redistributions of wealth and income.

In the remainder of the dissertation, an effort is made to provide empirical support for this hypothesis. The formulation of a proxy for specialization and division of labor is the subject of the next chapter.

Table 5.1 Total Government Spending as a Percentage of GNP; Public Expenditure Categories as a Percentage of Total Government Spending; United States, 1902-1970[a].

	1902	13	27	40	50	60	70
Total Spending	**7.7**	**8.1**	**11.8**	**20.5**	**24.7**	**30.0**	**34.1**
Defense[b]	18.1	13.4	10.7	10.2	30.7	34.8	26.9
Debt Interest	6.0	5.3	12.0	7.6	6.9	6.2	5.5
Public Welfare[c]	2.4	1.9	1.4	12.3	10.9	6.9	7.4
Social Security	0.0	0.0	0.0	0.1	1.0	7.1	10.8
Education	15.7	18.0	20.0	13.9	13.7	12.8	16.8
Health	3.6	3.4	3.8	3.6	3.9	3.5	4.1
Other[d]	54.2	58.1	52.1	52.3	32.9	28.6	25.6

Source: United States Department of Commerce [1975, pp. 1120-1121].

[a] The figures refer to the sum of federal, state and local governments.

[b] Defense expenditures include payments to veterans not elsewhere classified.

[c] Public welfare expenditures include payments for farm subsidies and payments for unemployment compensation.

[d] Particularly financing and operating of government enterprises.

Table 5.2 General Government Expenditures as a Percentage of GDP; OECD Countries, 1982.

Country:	
Switzerland[a]	30.0
Spain (1981)	34.1
Japan	34.2
Iceland (1980)	34.4
Australia	36.3
Greece[a]	37.4
United States	37.6
Finland	41.3
Portugal (1981)	42.7
United Kingdom	47.4
Norway	48.8
Germany, Fed. Rep. of	49.4
Austria	50.3
France	50.7
Italy	53.7
Luxembourg (1980)	54.3
Canada	56.5
Belgium	56.6
Ireland (1981)	57.1
Denmark	60.7
Netherlands	63.7
Sweden	67.3
Mean (unweighted)	**47.0**

Source: Saunders and Klau [1985, p. 29].

[a] Current disbursements only.

Table 5.3 Public Expenditures as a Percentage of GNP; United States and Average over Fifteen Developed Countries (DCs), 1953-54 and 1973-74.

Expenditure Category	1953-54	1973-74
Total Government:		
US	27.0	32.2
Avg. of 15 DCs	28.9	39.4
SD of 15 DCs	4.1	7.2
CV of 15 DCs	14.1	18.3
Defense Expenses:		
US	12.3	5.7
Avg. of 15 DCs	4.1	2.5
SD of 15 DCs	2.5	1.0
CV of 15 DCs	60.7	41.1
Transfers[a]:		
US	5.5	11.0
Avg. of 14 DCs	11.9	18.8
SD of 14 DCs	4.3	5.9
CV of 14 DCs	36.4	31.6
Nontransfer, Nondefense:		
US	9.2	15.5
Avg. of 15 DCs	12.6	18.4
SD of 15 DCs	2.9	3.5
CV of 15 DCs	22.9	18.9

Sources: Peltzman [1980; pp. 212-13]. All sample data are taken from the National Accounts of OECD Countries; US data are taken from the Economic Report of the President.

[a] Transfer payments were not broken down separately for Switzerland.

Sample countries are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, Netherlands, Norway, Sweden, Switzerland and the United States. "SD" of 15 (14) DCs is standard deviation for the 15 (14) country sample. "CV" is coefficient of variation.

Table 5.4 Public Expenditures on Major Income Transfer Programs, as a Percentage of GNP; The Netherlands, 1965-1983.

	Date-Enacted	1965	1970	1975	1981	1983
Social Insurance:						
Old Age Pensions	1957	4.2	4.5	5.6	5.8	5.9
Widows and Orphans Pensions	1959	0.6	0.6	0.7	0.7	0.7
Children Allowances	1963	2.0	2.0	1.9	2.0	2.0
Unemployment Benefits	1952	0.2	0.2	0.7	1.0	1.3
Sickness Benefits	1930	1.2	1.8	2.1	1.9	1.9
Disability Benefits Employees	1967	NE	1.4	2.6	2.2	2.0
General Disability Benefits	1976	NE	NE	NE	2.1	2.5
Health Insurance	1966	2.0	2.7	3.5	3.4	3.4
Exceptional Medical Expenses	1968	NE	1.0	2.0	2.1	2.2
Civil Servant Programs[a]	-	NA	1.0	1.3	1.5	1.4
Public Assistance:						
Unemployment Benefits	1965	0.0	0.1	0.5	1.0	2.0
Social Assistance	1965	0.8	1.0	1.8	1.9	2.6
[Social Assistance Unemployment Benefits]		0.0	0.0	0.2	0.4	0.9
Social Employment Program	1969	NE	0.3	0.4	0.5	0.5
Housing Assistance[a]	-	0.3	0.3	0.8	1.0	1.3
Total		**11.3**	**16.9**	**23.9**	**27.1**	**29.6**

Source: Wolfe et al. [1984, p. 613].

[a] Various programs enacted in different years.

NE = nonexistent; NA = not available

Table 5.5 Total Government Revenues as a Percentage of GNP; Government Revenues by Source as a Percentage of Total Revenues; United States, 1902-1970.

	1902	1913	1927	1940	1950	1960	1970
Total Revenues	**7.8**	**7.5**	**12.8**	**17.9**	**23.4**	**30.4**	**34.1**
Personal Income	0.0	0.0	7.8	6.6	24.8	28.2	30.3
Corporate Income	0.0	1.3	11.1	7.2	16.6	14.8	11.0
Sales	30.8	22.5	12.9	23.1	19.5	16.0	14.6
Property	42.0	44.6	36.7	24.9	11.0	10.7	10.2
Unemployment and Social Security	0.0	0.0	0.0	8.3	5.0	8.6	12.5
Other	27.2	31.6	31.5	29.9	23.1	21.7	21.4

Source: United States Department of Commerce [1975, pp. 1119-21].

CHAPTER VI

TRANSACTION COSTS: A PROXY FOR SPECIALIZATION AND DIVISION OF LABOR

VI.1 Introduction

In order to assess empirically the hypothesis presented in this study, a measure for specialization and division of labor is required. Unfortunately, the statistical bureaus do not provide such a measure. In the absence of alternatives, the percentage of the population living in urban areas is often used as an approximation for the degree of specialization and division of labor in a country. Since the shift from rural to urban living marked every Western country during the twentieth century, this proxy would seem acceptable.

Nevertheless, urbanization or population density remains a rather crude indicator for specialization and division of labor. Also, it may be clear that specialization and division of labor entails urban living, but the reverse does not hold, as many urban areas in the Third World attest. In other words, living in a close geographic proximity may be seen as a necessary condition, but obviously not as a sufficient condition for specialization and division of labor, making urbanization a somewhat troublesome indicator. For these reasons, this study does not use urbanization as a proxy for specialization and division of labor, but attempts to advance an alternative indicator.

As was argued in the previous chapter, increasing specialization and division of labor resulted in an increasing number of (complicated and impersonal) exchanges, both between participants in the marketplace and within economic organizations. This in turn necessitated (in some proportion) the investment of a growing amount of resources in order to reap the benefits from these exchanges. More general, the number of exchanges in the economy and the amount of resources devoted to realizing the gains from these exchanges, i.e. the transaction costs, seem positively correlated with the degree of specialization and division of labor in a country. Countries in which specialization and division of labor is rudimentary, transaction costs in the aggregate are relatively low,

whereas the total amount of resources absorbed by modern highly specialized economies to transact is relatively high[1].

In this chapter, the level of total transaction costs is suggested as an approximation for the degree of specialization and division of labor. A simple transaction cost model is formulated from which two operational measures for the amount of transaction costs made in an economy can be obtained. Before formulating this model, the next two sections review briefly several parts of the transaction cost/industrial organization literature (and some related issues) in order to attain a better insight in the concept of transaction costs employed in this thesis.

VI.2 Defining Transaction Costs

In 1937, Coase published his well-known article *"The Nature of the Firm"*. The question raised in this seminal paper was of a staggering simplicity: Why do firms exist? Indeed, in a Walrasian world the price mechanism allocates all resources, and firms have no reason to emerge. Coase argued, however, that the price mechanism as a means of resource allocation may be superseded by a firm, if there is a cost of using the market. An entrepreneur will then direct resources within his organization.

> "The main reason why it is profitable to establish a firm would seem to be that there is a cost of using the price mechanism. The most obvious cost of "organizing" production through the price mechanism is that of discovering what the relevant prices are. ... The cost of negotiating and concluding a separate contract for each exchange transaction which takes place on the market must also be taken into account" [Coase, 1937, p. 336; quotation-marks in original].

Firms will continuously balance against each other the possibility of coordinating the productive process through managers or through the marketplace. Internalization will occur when the associated costs are lower than the costs of using the price mechanism.

> "... a firm will tend to expand until the costs of organizing an extra transaction within the firm become equal to the costs of carrying out the same transaction by means of an exchange on the open market..." [Coase, 1937, p. 341].

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[1] For an elaboration on this argument, see North [1984].

Although disregarded for many years, today this paper is considered as the foundation of modern transaction costs/industrial organization theory. It has been crucial in addressing the role of transaction costs in explaining the structure of economic organizations[2].

It seems that no consensus exists among scholars of industrial organizations about what the main explanation for various forms of economic organization is. The authors involved have developed many hypotheses which reflect different views with respect to the kinds of transaction costs that are thought to be determining economic organizational forms. It is useful to give a bird's-eye view of some these hypotheses[3].

In his extensive and important work on transaction costs, Williamson focused on the costs of opportunistic behavior or cheating. In *"Markets and Hierarchies"* [1975], Williamson related these costs to "small numbers bargaining", i.e. to situations in which the potential number of parties to exchange with is relatively small. More recently, in *"The Economic Institutions of Capitalism"* [1986], Williamson concentrated on those types of transaction costs that occur in exchanges involving "asset specificity", i.e. assets that have no alternative use either inside or outside the firm.

Lancaster [1966] emphasized that one gets utility from diverse attributes of a good or service. The classic example is the purchase of a car. Engine, speed, size, shape, color, interior design, etc. are all valuable dimensions of the single automobile bought. Particularly Barzel [1982] and Cheung [1974, 1983] addressed the measurement costs regarding these multiple dimensions or attributes of goods and services exchanged.

The principle-agent problem was considered long ago by Berle and Means in their classic *"The Modern Corporation and Private Property"* [1932]. Alchian and Demsetz [1972] re-examined principle-agent relationships in their attempt to explain hierarchically structured firms. They focused on the costs of monitoring and coordinating team

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[2] Coase's article has on numerous occasions been revisited. For a recent example, see Demsetz [1988].

[3] As will be shown, the costs considered are not always referred to as "transaction costs" by the authors. Other names are, for example, measurement costs, coordination costs, agency costs, information costs and the costs of specifying and enforcing property rights.

production. Agency costs were analyzed in extent by Ross [1973], Jensen and Meckling [1976], Holmström [1979, 1982], Fama [1980] and Fama and Jensen [1983a, 1983b] and many others.

The first to consider informational problems was Hayek [1945] who argued that all information "never exists in concentrated or integrated form, but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess" [p. 519]. Stigler's [1961] account on information, Akerlof's [1970] article on "lemons" and Spence's [1974] work on market signaling paved the way for modern information economics.

In accordance with North [1981, ch. 4], this study views transaction costs as the costs of performing transactions in the economy. More precisely, transaction costs are seen as the costs of capturing the gains from exchanges. Put differently, they involve all the costs individuals must incur in order to realize the benefits from the economic exchange process.

This comprehensive concept of transaction costs includes every cost component mentioned above. In other words, transaction costs in this study concern the Williamson's types of transaction costs; the costs of measurement; the costs of coordinating and integrating input, production and distribution processes; the costs of monitoring and metering the performance of agents; and the costs of obtaining, conveying and processing information. But they also include the costs of specifying and enforcing the property rights structure in a society, as well as the costs of delineating and enforcing private contracts. This concept of transaction costs is the basis of the remaining part of this chapter.

VI.3 Transformation Sector Versus Transaction Sector

In national income accounts, the economy is usually divided into a primary, secondary and tertiary sector. In order to detect regularities in the process of economic development, structural change and economic growth, one can study the development of these sectors' production and employment shares against the background of per capita income (or some other economic indicators). The course of industrialization and the rise of the service industries are important features in this field of economic analysis. Seminal

contributions to this type of research were made by Fourastié [1949], Clark [1957], Chenery [1960], Chenery and Taylor [1968] and Kuznets [1971]. Their approach resulted in the well-known 'development pattern' or 'normal pattern' for structural change of a country's prosperity[4].

An alternative classification of economic activity has been presented by Wolff [1987]. Inspired by the Marxian category of unproductive labor, which was re-addressed by Baran and Sweezy in their classic *"Monopoly Capital"* [1966], Wolff proposed a partition of the economy into "productive" and "unproductive sectors". Productive sectors are defined as industries which create commodities and hence surplus value; unproductive sectors are defined as industries which provide circulation facilities such as advertizing, sales promotion etc., and therefore absorb surplus value. Reasoning along these lines of Marxian social science, empirical evidence is advanced on the persistent shift of resources to unproductive activities in the post-war US economy, and on the importance of this development for the slowdown of the rate of capital accumulation, productivity growth and living standards that took place in the USA during the 1970's.

This study follows an approach (already referred to in chapter V) introduced by North and Wallis [1986; N-W, for short], which exhibits some consonance with Wolff's analysis. Employing the transaction cost concept outlined in the previous section, N-W suggested a division of the economy in a "transformation sector" and a "transaction sector". The former is concerned with performing the transformation function in the economy, i.e. with physically transforming inputs into outputs. Its size is measured by the amount of resources (as a percentage of GNP) a society uses for the physical production processes. These resources reflect the transformation costs made in an economy. The latter sector deals with carrying out the transaction function in the economy, i.e. with transacting between agents. Its size is measured by the amount of resources (as a percentage of GNP) a society devotes to the economic exchange processes. These resources reflect the transaction costs made in an economy.

It should be stressed that both the transformation and the transaction sector do *not* correspond to the measures of, for example, sector output, sector income or added

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[4] For a more recent contribution to the normal pattern analysis, see van Gemert's [1987] investigation of structural changes in nineteen OECD countries during 1962-80.

value which are usually employed to determine the contributions of a sector to GNP. According to the definitions given above, these two sectors only reflect the amount of resources used to perform production processes and transactions, respectively. No information is given about the value of the goods and services these sectors provide to the economy.

N-W found a continuing increase in the size of the transaction sector in the USA for selected years between 1870-1970. Unlike Wolff, the authors did not explicitly link their results to the performance of the US economy during this period. Implicitly, however, N-W's analysis is in conflict with Wolff's claim mentioned above, since N-W consider the persistent shift of resources to transaction activities as a consequence of increasing specialization and division of labor (and thus of *economic progress*). This interesting contrast between both approaches is beyond the scope of this study though, and will therefore not be analyzed in extent.

Building on N-W 's analysis, the next section lays out a simple transaction cost model which gives some insights in the way in which transaction costs made in an economy can be measured. A measure is distinguished which corresponds with the one N-W used in their attempt to estimate transaction costs in the US economy. In addition, an alternative measure is proposed which is expected to yield more accurate estimation results.

VI.4 A Simple Transaction Cost Model

It is fairly easy in theory to separate transformation and transaction costs. Consider the aforementioned "Lancasterian good or service", i.e. a good or service thought of as a bundle of several valuable characteristics:

$$(6.1)\ G = (C_{ph,1}, C_{ph,2}, ..., C_{ph,n}, C_{pr,1}, C_{pr,2}, ..., C_{pr,m})$$

where G = good or service

$C_{ph,i}$ = physical characteristic i of a good or service; i = 1, ...,n

$C_{pr,i}$ = property rights characteristic i of a good or service; i = 1, ...,m

It is assumed in (6.1) that these characteristics or dimensions can be divided in physical and property rights attributes. Examples of physical characteristics are chemical composition, size, weight, geographic location and time spent waiting. Property rights characteristics refer to the right to use, the right to derive income from the use of, the right to exclude others from using and the right to alienate. As is said in section VI.2, an individual is assumed to receive utility from various kinds of attributes of a good or service, both physical and property rights attributes.

Equation (6.2) states a production function relating inputs to output, given certain factors:

(6.2) $q = F(l_f, k_f, d_f, e_f, l_a, k_a, d_a, e_a; T, PRS)$

where q = output

l_f, k_f, d_f, e_f = labor input, capital input, land input and entrepreneurial input, respectively, devoted to the transformation function

l_a, k_a, d_a, e_a = labor input, capital input, land input and entrepreneurial input, respectively, devoted to the transaction function

T = technology

PRS = property rights structure

The output depicted in this function consists of goods and services which can have multiple dimensions as is suggested above. A distinction is made between inputs (labor, capital, land and entrepreneurial skill) that are devoted to the transformation function and inputs that are devoted to the transaction function. Transformation inputs are used to change the physical characteristics of a good or service; transaction inputs are required to alter the property rights attributes. Both the technology and the property rights structure have an impact on the way in which the inputs are combined into output. The technology determines the physically possible combinations of inputs, given the level of existing knowledge. The property rights structure determines the input combinations needed to transact.

Equation (6.3) describes the principle on which the aggregate national income accounts are based:

$$(6.3)\ Q = L_f + K_f + D_f + E_f + L_a + K_a + D_a + E_a$$

Total value of output should, of course, equal the total value of transformation and transaction inputs[5].

Equation (6.4) states the assumption that the total transaction costs in the economy are identical to the value of the transaction inputs, i.e. to the sum of the costs of labor, capital, land and entrepreneurial skill used to perform the transaction function:

$$(6.4)\ TAC_{tot} = L_a + K_a + D_a + E_a$$

Equation (6.5) simply makes a distinction between transaction costs made in the private and the public sector:

$$(6.5)\ TAC_{tot} = TAC_{pr} + TAC_{pu}$$

Equations (6.6) and (6.6') give two separate measures for the transaction costs made in the private sector:

$$(6.6)\ TAC_{pr} = \sum_{i=1}^{k} pr_i^{TA} + \sum_{i=1}^{l} pr_i^{TF}$$

$$(6.6')\ TAC'_{pr} = \sum_{i=1}^{k} pr_i^{TA'} + \sum_{i=1}^{l} pr_i^{TF}$$

where pr_i^{TA} = total resources used in private transaction industry i; i = 1,...,k

$pr_i^{TA'}$ = total resources used for transactions in private transaction industry i; i = 1,...,k

pr_i^{TF} = total resources used for transactions in private transformation industry i; i = 1,...,l

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[5] Values are denoted by capitals.

Equation (6.6) represents the so-called N-W measure for transaction costs in the private sector. This measure contains the following two components. First, total resources used in transaction industries such as banking, real estate, trade etc. It is thus assumed that all inputs into transaction industries go to transaction services. Second, total resources used for transactions in transformation industries such as agriculture, manufacturing, construction etc. Although these industries are primarily concerned with physical transformation processes, they also devote some resources to transactions. Examples are the resources devoted to the purchase of inputs, the monitoring of the transformation process and the distribution of outputs.

Equation (6.6') represents an alternative measure for transaction costs in the private sector, which corresponds more closely to the concept of the transaction sector outlined in the previous section. This so-called refined measure is similar to the N-W measure, except for the first component. Unlike the N-W measure, which includes all resources used by transaction industries, the refined measure excludes the transformation elements in private transaction industries from the transaction costs made in these industries. Transportation services in the trade sector may serve as an example of such transformation activities. By excluding the transformation elements of the transaction industries, the refined measure provides more precise information on the magnitude of the resources which the private sector devotes to transacting than the N-W measure.

Equations (6.7) and (6.7') give two separate measures for the transaction costs made in the public sector:

$$(6.7)\quad TAC_{pu} = \sum_{i=1}^{r} pu_i^{TA} + \sum_{i=1}^{s} pu_i^{NTA}$$

$$(6.7')\quad TAC'_{pu} = \sum_{i=1}^{r} pu_i^{TA'} + \sum_{i=1}^{s} pu_i^{NTA}$$

where pu_i^{TA} = total resources used in public transaction service i; i = 1,...,r

$pu_i^{TA'}$ = total resources used for transactions in public transaction service i; i = 1,...r

pu_i^{NTA} = total resources used for transactions in public nontransaction

service i; i = 1,...,s

Equation (6.7) depicts the N-W measure for transaction costs in the public sector. Analogously, this measure consists of two components. The first component refers to all resources used by the government in order to provide transaction services such as establishing property rights. It is thus assumed that all inputs in transaction services are transaction inputs. The second component is made up by all resources the government uses for transactions in order to carry out nontransaction services such as redistributing wealth and income. An example of such nontransaction services could be the resources devoted to registering and monitoring welfare facilities[6].

Equation (6.7') depicts an alternative measure for transaction costs in the public sector. Again, this refined measure is similar to the N-W measure, except for the first component. Nontransaction inputs (e.g. maintenance and cleaning activities) that are associated with providing transaction services are excluded from the transaction costs in the public sector.

Equations (6.6/6.6') and (6.7/6.7') can be employed to estimate the amount of transaction costs made by the private and public sector, respectively. The sum of both estimates represents the magnitude of total transaction costs made in an economy. In the next chapter, an attempt is made to apply both the N-W measure and the refined measure to the Dutch and German economy. Particularly interesting is to investigate whether these two measures show a different pattern of transaction costs through time.

VI.5 Concluding Remarks

The empirical assessment of the hypothesis of this study entails the specification of an approximation for specialization and division of labor. In this chapter, the level of total transaction costs in an economy is suggested as a proxy for this variable.

Transaction costs are assumed to include all cost components associated with

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[6] Since a government is not so much concerned with physically transforming inputs into outputs, the terminology "nontransaction" service is preferred to "transformation" service.

making exchanges. Hence, the level of total transaction costs in an economy is defined as the sum of all resources the private and the public sector devote to perform transactions.

Building on N-W 's division of the economy into a transformation and transaction sector, a simple transaction cost model is formulated from which two separate measures for transaction costs are obtained: the N-W measure and the refined measure.

The N-W measure for transaction costs in the private sector is equal to total resources used in transaction industries, plus the resources used for transactions in transformation industries. Similarly, the N-W measure for transaction costs in the public sector consists of total resources used in transaction services, plus the resources used for transactions in nontransaction services.

The refined measure for transaction costs in both the private and the public sector is akin to the N-W measure, except for the component regarding transaction costs in private transaction industries and public transaction services. Transformation inputs are excluded in private transaction industries, whereas nontransaction inputs are excluded in public transaction services. Because of this refined treatment, this measure is expected to provide more accurate estimates of transaction costs in an economy.

By means of these measures, the next chapter attempts to provide empirical support for the hypothesis of this study, using data from the Dutch and German economy. In doing so, the differences between the measure employed by N-W and the one introduced in this chapter will be illustrated.

CHAPTER VII

THE TRANSACTION COSTS MEASURES APPLIED TO THE DUTCH AND GERMAN ECONOMY

VII.1 Introduction

The chain of reasoning pursued in this study can be re-stated in brief as follows. It is hypothesized that increasing specialization and division of labor caused the growth of government in the West. The level of total transaction costs in an economy is suggested as a proxy for the degree of specialization and division of labor. Investigating the development of transaction costs through time is expected to provide some empirical underpinning for the hypothesis of this study.

This chapter constitutes the empirical part of the dissertation. An attempt is made to apply the transaction costs measures defined in the previous chapter to the Dutch and German economy. Although a few pieces of evidence refer to the first half of the twentieth century, the focus is on the post-war period.

Measuring transaction costs through time and across countries is beset with several difficulties. Data limitations frequently pose problems, particularly for earlier years. This is perhaps no surprise since the national income accounts (an important source of information) are primarily constructed with the purpose to provide information on the primary, secondary and tertiary sector in the economy, not on the transaction sector. Furthermore, the way in which the data required to calculate transaction costs are classified by the statistical bureaus, is subject to changes over time. For example, it is difficult to construct homogeneous occupational and industrial categories, because the number of separately classified occupations and industries has increased in the course of time. This increase can be interpreted as a feature of the postulated progressive differentiation and specialization of economic and social functions in Western societies. Also, not all countries use identical criteria for the classifications employed. These matters obviously thwart to some extent the analysis at hand. Notwithstanding these drawbacks, in this chapter estimates of transaction costs in the Dutch and German

economy are supplied for the post-war period, which are both consistent over time and between countries.

From, for example, national accounts of OECD countries it can be seen that the public sector has grown considerably in both the Netherlands and Germany after World War II. So, if the hypothesis of this study, that government growth is caused by increasing specialization and division of labor (approximated by the level of transaction costs), has merit, then one should also observe an increase in the level of transaction costs for these two countries over the past four decades. Before investigating whether this is the case, two limitations of the transaction costs measures defined in chapter VI are discussed in the next section.

VII.2 Two Limitations of the Transaction Costs Measures

According to the transaction costs model outlined in the previous chapter, the level of total transaction costs in an economy is equal to the value of total transaction inputs, i.e. the sum of the costs of labor, capital, land and entrepreneurial skill used to perform transactions in both the private and public sector. Given the available data, it is not possible though to measure all these transaction inputs. The following two main limitations of the transaction costs measures resulting from the lack of data are distinguished.

First, only those transaction costs are measured which result in an exchange of a marketed service. In other words, what is measured is the level of total marketed transaction services that are provided in an economy. These *services* constitute the observable element of the transaction *costs*[1].

It is worth pointing out that there exist many examples of transaction costs that do not result in exchanges of marketed services, and which are therefore not accounted for by the measures used in this study. One might think of the following instances:

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[1] This limitation is similar to the limitation concerning the way in which national income is measured. National income accounts do not measure the total income of individuals in a society but capture only that part of national income that flows through the market. Income generated through, for example, home production and black market activities does not show up in national income statistics of developed countries.

waiting in lines or queuing, particularly as a result of rationing; searching for information about prices, commodities etc., especially when this kind of information is inefficiently distributed; time involved to obtain permits or licenses in order to do business; time elapsing before spare parts arrive at the place needed; uncertainty resulting from partial and ineffective enforcement of private contracts and so on. These kinds of nonmarket transaction costs are not captured by the transaction costs measures used in this analysis. According to several authors, however, these costs may be considerable, and therefore impedimenta to productive activities, particularly in Second and Third World countries[2].

The second limitation resulting from the way in which data are collected by the statistical bureaus, is that only labor costs are considered in measuring:

(1) the resources used for transformations in private transaction industries; and

(2) the resources used for nontransactions in public transaction services.

As is shown below, (1) is subtracted from the total of inputs that go into private transaction industries in order to obtain an estimate for the amount of resources private transaction industries use for transactions ($\sum_{i=1}^{k} pr_i^{TA'}$ in equation (6.6')). Analogously, (2) is subtracted from the total of inputs that go into transaction services in order to obtain an estimate for the amount of resources public transaction services use for transactions ($\sum_{i=1}^{r} pu_i^{TA'}$ in equation (6.7')).

Additionally, only labor costs are taken into account in measuring:

(3) the resources used for transactions in private transformation industries ($\sum_{i=1}^{l} pr_i^{TF}$ in equation (6.6) and (6.6'));

(4) the resources used for transactions in public nontransaction services ($\sum_{i=1}^{s} pu_i^{NTA}$ in equation (6.7) and (6.7')).

From the available statistics, it is unfortunately not possible to determine the costs of capital, land and entrepreneurial skill in these areas. It easily follows that this focus on labor costs results in an overestimation of transaction costs in private transaction industries and public transaction services, and in an underestimation of transaction costs

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[2] For example, see de Soto's [1989, ch. 5] description of the difficulties an entrepreneur used to face when starting a firm in Peru. From an experiment conducted in Lima in 1983, it turned out that one must spend 289 days on bureaucratic procedures to obtain eleven permits for setting up a small industry in accordance with the law.

in private transformation industries and public nontransaction services.

Keeping these two limitations in mind, the next two sections present the results of the empirical application of the transaction costs measures to the Dutch and German economy, respectively.

VII.3 Measuring Transaction Costs in the Dutch Economy

The results for the Dutch economy are presented in tables 7.1 - 7.8 at the end of this chapter, which are constructed from statistics all supplied by the Netherlands Central Bureau of Statistics [NCBS, for short]. Table 7.1 contains information for the years 1920 and 1930, whereas the other tables refer to the post-war period. The main sources on which the research is based consist of census reports on occupations, labor force statistics, input-output tables and public expenditure data. Details about the data and the calculations made, can be found in appendix A of this chapter.

VII.3.1 Transaction-Related Occupations

Tables 7.1 and 7.2 provide a classification of what this study considers to be transaction-related occupations in an economy. These occupations refer to those types of jobs that mainly consist of transaction activities. One can distinguish among professional workers (accountants, lawyers, judges etc.) intermediate workers (managers, inspectors, foremen, supervisors, clerks etc.), sales workers and protective workers (police-officers, guards, service-men etc.).

All of the occupations listed correspond to several elements of the transaction cost concept defined in section VI.2. It is useful to describe briefly the transaction activities of these employees.

Accountants are mainly concerned with verifying and approving accounts. Legal workers are responsible for delineating, interpreting and upholding the law. They facilitate the coordination, enactment and monitoring of contracts, and settle differences in both the private and public sphere.

As is well-known, since Coase [1937], a firm is often considered as a "nexus of contracts" which can be interpreted as a sequential series of relations between owners,

intermediate workers and production workers. The transaction activities of intermediate employees can be summed up as follows. Managers plan, coordinate, integrate, control and evaluate input, production and distribution processes. Inspectors, foremen and supervisors meter and monitor the performance of various workers, whereas foremen and supervisors also engage in conveying information. Clerical and kindred workers such as secretaries, typists, telephone operators typically process and convey information.

Sales workers refer to a variety of workers, including insurance and real estate agents, who all facilitate transferring ownership. Protective workers like police-officers, guards etc. maintain the existing social order by securing and enforcing property rights, while service-men contribute, at least to some extent, to the protection of property rights on an international scale.

There exists somewhat of a problem with the listings of transaction-related occupations in tables 7.1 and 7.2. The figures are obtained by using the standard taxonomy based on a "one-man/one-job" principle. However, it is not necessarily the case that all employees fall completely into either the transformation or the transaction sector. A foreman, for example, may also devote some of his time to physically transforming inputs into outputs. Clerks and farm managers, too, may undertake product transforming activities. Conversely, production workers may also undertake some transaction activities. Since the statistics neither report the extent in which transaction-related employees engage in transformation activities, nor the extent in which production workers engage in transaction work efforts, the figures presented remain inevitably surrounded by a certain degree of inaccuracy.

In addition, a specific drawback with respect to the occupation of service-men should be pointed out. As is said above, these workers contribute to the protection of property rights on an international scale, and are therefore included in the total of transaction-related jobs. In contrast with the other transaction-related occupations listed in tables 7.1 and 7.2, the amount of service-men employed in the military does not so much depend on the degree of specialization and division of labor in a country. Of more importance is the capriciousness of history, particularly as a result of political decisions in the sphere of war, detente, international agreements etc., which may alter the extent of the army dramatically. Caution is thus required for the influence of these potential disturbing factors.

Table 7.1 details the employment in transaction-related occupations as a percentage of the total labor force in the Netherlands during the period 1920-1960. The percentages reported are all based on classifications by occupation of the economically active population, which were only compiled by the NCBS from 1920 onwards, and which had to be confined to professional workers, salaried employees and wage-earners. Own account workers (professional workers excluded) were not taken into account in these classifications. Unfortunately, the NCBS did not provide these listings, from which own account workers are excluded, for the period after 1960.

Total transaction-related employment increased from roughly 14% of the labor force in 1920 to 24% in 1960. This increase was gradual until 1947 and accelerated between 1947-1960. Except for the categories inspectors and police-officers, guards etc., all transaction-related jobs reached in 1960 a higher level compared to 1920 (as a percentage of the labor force). Clerical and kindred workers constitute by and large the most important group in all periods, whereas the professional workers represent the smallest category of transaction-related occupations.

Table 7.2 shows how transaction-related occupations have developed in the Netherlands from 1960 until 1989. In contrast with table 7.1, this table is based on occupational classifications which include own account workers. The NCBS classified these workers by occupation for the first time in 1960. Comparing the figures listed in tables 7.1 and 7.2, it is clear that in 1960 sales workers were the most important transaction-related jobs under the own account workers[3].

Total transaction-related employment rose almost another 10 percentage points over the past thirty years, and ended up close to four-tenth of the Dutch work force in 1989. Worth noting is that the bulk of the increase in transaction activities was realized by 1975. Compared to 1975, the percentages of transaction-related occupations were slightly lower in 1981 and slightly higher in 1989. The figures indicate that, except for service-men, all transaction-related jobs increased during 1960-1989. Clerical and kindred

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[3] In 1960, the percentages for managers and clerical workers listed in table 7.1 are slightly higher than the corresponding percentages in table 7.2. It can be inferred from the sources of both tables, that this is due to some differences in definition of these two categories.

workers remain the largest category, and professional workers still represent the smallest group.

Tables 7.3 and 7.4 split up the total number of transaction-related jobs to the industries of the Dutch economy. A distinction is made in these tables between transformation industries, transaction industries and the government. Although not all firms easily fit in one of these three categories, such distinction is useful in order to calculate transaction costs, as is shown below.

Transformation industries include all firms performing primary and secondary activities as well as an important part of the firms in the tertiary sector. All of these industries engage in transforming inputs into outputs. Transaction industries are divided into trade (retail and wholesale trade) and finance/insurance/real estate. The trade industries are primarily concerned with transferring ownership. Generally speaking, finance and insurance intermediate in financial markets, while real estate facilitates in transferring realty. Government basically refers to public administration, defense and social insurance. This rather crude distinction is used in the labor force statistics provided by the NCBS, and hence in this study[4].

Table 7.3 depicts the extent in which each separate industry contributes to the total of transaction-related occupations in the Dutch economy during the post-war period. Trade, government, manufacturing and, in the course of time, services are the main industries in this respect. Not surprisingly, the primary industries, in which a decreasing part of the labor force found work, contribute in a small degree to the total of transaction-related occupations. An important conclusion which can be drawn on the basis of this table is that the employment in transaction-related jobs (as a percentage of the total labor force) increased in each industry, but more pronounced in the transformation industries than in the transaction industries and the government.

Table 7.4 provides some insights in the composition of the employment in each separate industry of the Dutch economy. The percentages in this table represent the

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[4] Due to data limitations, tables 7.3 and 7.4 were not possible to construct for the pre-war period. The percentages listed for 1947 and 1960 are obtained by making several assumptions with respect to the available census data, elaborated upon in appendix A of this chapter.

shares of transaction-related occupations in the total employment of an industry. For example, the figure in the upper left corner indicates that 0.63% of all employment in agriculture/forestry/ fishing in 1947 consisted of transaction-related jobs.

Within transformation industries, transportation/communications/ utilities have the highest share of transaction-related employment, while in agriculture/forestry/fishing this share is at the lowest level. A common feature is that the share of transaction-related occupations has grown continuously in all transformation industries over the years, except for 1981, where it slightly declined in most industries.

The shares of employment in transaction-related jobs are relatively high in transaction industries and the government. They have remained more or less constant within the transaction industries during the period considered; within the government the transaction share declined in 1960 and 1975, but in 1985 it reached again a level only little below that of 1947.

To sum up this description of transaction-related occupations, it is worth emphasizing three findings. First, employment in transaction-related jobs showed an upward trend in the Dutch economy from 1920 until 1989. Second, all industries contributed to this growth during the post-war period, although transformation industries more than other industries. Third, the share of transaction-related jobs increased almost continuously in transformation industries after World War II.

The information laid down in table 7.4 will be used to estimate transaction costs in the private and the public sector. The private sector is discussed first.

VII.3.2 Transaction Costs in the Private Sector

Equations (6.6) and (6.6') stated that the transaction costs made in the private sector originate from transaction industries as well as transformation industries. Table 7.5 provides insights in the transaction costs made in transaction industries; table 7.6 depicts the transaction costs made in transformation industries. Both tables refer to the post-war period.

Table 7.5 is structured along the lines of the input-output table of the Dutch economy in which the resources used by industries are divided into two elements:(1) intermediary goods and services and (2) primary costs. The former refers to the goods

and services that are purchased from other industries; the latter includes compensations of employees, operating surplus, imports and a few other cost components[5].

Both the N-W estimates and the refined estimates of transaction costs in private transaction industries are presented. One is reminded that the N-W estimates include all resources that go into transaction industries, whereas the refined estimates are corrected for the resources used for transforming activities in these industries.

As was pointed out in section VII.2, the transformation resources in private transaction industries contain labor costs only. By means of the percentages listed in table 7.4, the total wage bill in each transaction industry is divided into compensations for transaction-related employees and transformation employees. The compensations for transformation employees are subtracted from the total wage bill in order to obtain the extended estimates.

Clearly, transaction costs made by private transaction industries are quantitatively very important. The table shows that total resources used in the trade industries and finance/insurance/real estate reached about 28% of GNP in 1947, and almost one third of GNP in 1985. Moreover, the table shows that this rise took place from 1975 onwards and was entirely accounted for by finance/insurance/real estate.

In 1975, transaction costs fell back in the transaction industries, particularly in the trade sector. The increase in transaction costs in 1981 and 1985 continued in 1987; the input-output table for this year indicates that total resources used in the trade industries and finance/insurance/real estate amount to about 19% and 15% of GNP, respectively [NCBS, 1990, pp. 232-5].

The refined estimates are, as expected, systematically smaller than the N-W estimates discussed above. It can be seen that the magnitude of the corrections are relatively small. More important, the refined estimates of transaction costs in private transaction industries show the same pattern over time as the N-W estimates.

Table 7.6 lists the resources used for transactions in private transformation industries in the Dutch economy during the post-war period. The transaction inputs going

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[5] The first input-output table of the Dutch economy was constructed for 1948. By making several assumptions, this table is used to estimate transaction costs in the private sector in 1947. See appendix A for details.

into these industries are determined by multiplying the total wage bill in each industry by the appropriate percentages presented in table 7.4. Compensations of transaction-related employees are then summed across all industries.

The figures indicate that total transaction costs within private transformation industries more than doubled over the past forty years. Almost all industries contributed to this growth, particularly manufacturing, transportation/communications/utilities and services. Contrary to private transaction industries, transaction costs in private transformation industries reached a peak in 1975, and declined in 1981; transaction costs tend to stabilize in these industries in 1985[6].

To summarize this description of transaction costs in the private sector, it is worth repeating two main conclusions. First, during the post-war period, transaction costs increase in both transaction and transformation industries. Second, the refined estimates of transaction costs in private transaction industries are systematically lower than the N-W estimates, but show a similar pattern over the years considered.

VII.3.3 Transaction Costs in the Public Sector

Equations (6.7) and (6.7') stated that the transaction costs made in the public sector originate from the provision of transaction services as well as nontransaction services. In order to obtain insight in these costs, consider table 7.7.

There are no figures given in this table for 1947. As a result of the aftermath of World War II and the Dutch military operations in Indonesia, the outlays for general administration and defense reached rather disproportional levels in this year. Including estimates for 1947 would provide misleading information about the course of transaction costs during the post-war period[7].

Public transaction services are divided into general administration, defense and

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[6] Obviously, these estimates can be improved upon by making calculations with more disaggregated wage and employment data.

[7] In 1938, public spending on general administration and defense amounted to 1.18% and 2.41% of GNP, respectively. The corresponding figures for 1947 are 3.74% and 5.77%, respectively [NCBS, 1954, pp. 235-7].

justice/public safety. Since chapter V already elaborated on these services, this classification does not need further explanation. Due to data limitations, it was not possible to calculate the refined estimates for these public transaction services. Public nontransaction services refer to all other public expenditures.

The table shows a modest increase in the total of transaction costs in the public sector from 8.60% of GNP in 1960 to 9.61% of GNP in 1985. This increase was entirely accounted for by the resources required for transactions in nontransaction services; total transaction services decreased slightly, mainly a result of lower defense spending[8]. Summarizing, the course of transaction costs in the public sector for the years considered showed a minor increase, caused by the transaction activities needed for providing nontransaction services[9].

VII.3.4 Total Transaction Costs

The private and public estimates need to be added in order to provide a single measure of transaction costs in the Dutch economy. For this purpose, consider table 7.8 which summarizes the previously discussed tables. Three main conclusions can be drawn, which closely correspond to the conclusions arrived at in the previous sub-sections.

First, total transaction costs in the Dutch economy increased from 43.51% of GNP in 1960 to 51.71% of GNP in 1985. Second, the bulk of the growth in total transaction costs was accounted for by the private sector. Third, although the refined estimates of total transaction costs were lower than the N-W estimates, they exhibited a similar pattern over the years.

An increasing amount of resources is thus devoted to performing exchanges in the Dutch economy over the last four decades. One should remember though that these estimates of transaction costs constitute the *observable* part of all the transaction costs

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[8] As can easily be seen from the table at hand, total transaction services provided by the public sector would show an increase over the years under study if defense expenditures are excluded.

[9] Note that an absolute increase in the transaction costs made in the public sector directly implies an increase in the size of government (ceteris paribus).

made in the Dutch economy. Also, it is worth re-emphasizing that in several areas *only* labor costs have been considered, thus neglecting the costs associated with capital, land and entrepreneurial skill. Given the systematic treatment of transaction and transformation industries in the private sector, and of transaction and nontransaction services in the public sector, the estimates presented of the *measurable* transaction costs can be treated with some confidence.

In order to assess whether these findings are typical for the Dutch economy, or also hold for other countries in the Western World, additional research needs to be done. This task is taken up in the next section, where the course of transaction costs in the German economy is investigated.

VII.4 Measuring Transaction Costs in the German Economy

The results for the German economy are presented in tables 7.9 - 7.15 at the end of this chapter, which are constructed using statistics of the German Imperial Statistical Office [GISO, for short], the German Federal Statistical Office [GFSO, for short] and the German Institute for Economic Research [GIER, for short].

Tables 7.9 - 7.11 also include information on the *German Empire* for the year 1933, while the other tables refer to *West-Germany* for selected years after World War II. Strictly speaking, the figures presented for 1933 and the years after World War II are not entirely comparable with one another, since the territory enclosed by the *German Empire* was, of course, not identical to that of *West-Germany*. This feature is neglected though in the analysis.

The main sources employed for this research are census reports on occupations, input-output tables and public expenditure data. Appendix B of this chapter provides details about the data and underlying calculations[10].

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[10] For notational convenience, the name *Germany* is used throughout this section for the entire period, instead of using *German Empire* for 1933 and *West-Germany* for the post-war period.

VII.4.1 Transaction-Related Occupations

Tables 7.9 - 7.11 provide insights in the development of transaction-related occupations in Germany during the period 1933-1987. These tables are all compiled using census data on occupations. The first classification by occupation of the entire economically active population in Germany dates from 1933, which is a few years before the shifts of the labor force into the military took place. After World War II, censuses were organized in Germany in 1950, 1961, 1970 and 1987. The occupational and industrial classifications reported in these tables are almost identical to those employed in the corresponding tables for the Dutch economy, and, therefore, do not need further elaboration.

Table 7.9 outlines the employment in transaction-related jobs, as a percentage of the total labor force, in Germany from 1933 until 1987. The figures indicate an increase of roughly 22 percentage points in the total of transaction-related employment over these years, much of which was realized between 1950-1970. All transaction-related jobs reached a considerable higher level in 1987 compared to 1933 (as a percentage of the total labor force), and most categories show a regular rise over time. Clerical and sales workers form the largest categories in every year, while the professional workers and product inspectors represent the smallest categories of transaction-related occupations.[11]

Table 7.10 shows the contribution of each separate industry to the total of transaction-related occupations in Germany during the period 1933-1987. Clearly, trade, manufacturing, government and, in more recent years, services are significant industries in this context, whereas the primary industries contribute only in a moderate degree to the total of transaction-related jobs. This table also reveals that all industries contributed to the growth of transaction-related occupations, although transformation industries in a larger extent than the other branches.

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[11] The level of the category foremen/supervisors/inspectors as reported, is considerably lower in Germany than in the Netherlands. This feature is partially explained by the fact that in the German statistics some of these workers are classified under transformation jobs since they also engage in production work. This problem, that one cannot always disentangle transformation and transaction jobs, has already been touched upon in the previous section.

Table 7.11 presents the shares of transaction-related employment for each separate industry in Germany over the years. These shares are again relatively low in transformation industries, as compared to transaction firms and the government. Except for agriculture/forestry/fishing, employment in transaction-related jobs has increased in every transformation industry throughout the period under study. In addition, the figures indicate that the importance of transaction-related occupations has fluctuated somewhat within transaction industries and the government, particularly between 1933-1950. Transaction industries end up in 1987 with a higher share of transaction-related jobs compared to 1933, while the opposite can be observed for the government.

From this description, three main conclusions can be drawn which are similar to those obtained from the description of transaction-related jobs in the Dutch economy. First, transaction-related employment exhibited an upward trend in the German economy for the years 1933-1987. Second, every industry contributed to this increase, particularly the transformation industries. Third, over the period under consideration, the share of transaction-related occupations rose almost continuously in the German transformation firms.

VII.4.2 Transaction Costs in the Private Sector

Tables 7.12 and 7.13 provide information on the transaction costs made in the German private sector during the post-war period. The former breaks down the course of transaction costs in transaction industries, whereas the latter shows how transaction costs have evolved in transformation industries. The percentages are based on the input-output tables of the German economy, and the same calculation methods are applied as in the corresponding tables for the Dutch economy[12].

Table 7.12 shows that total resources employed in the transaction industries reached about 28% of GNP in 1950, and rose steadily to nearly one third of GNP in 1987. Furthermore, the figures indicate that the bulk of this increase was realized from

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[12] The first input-output table of the German economy was constructed for 1954 by the GIER. By making several assumptions, this table is used to estimate transaction costs in the private sector in 1950. See appendix B for details.

1970 onwards, and was caused entirely by a drastic rise in finance/insurance/real estate. Note that the resources used in the trade industries declined during the post-war period. In addition to the N-W estimates, this table also reports the refined estimates of transaction costs in private transaction industries. These refined estimates are, as could be expected, all a little smaller than the N-W estimates, but they follow a similar pattern over the years.

Table 7.13 illustrates that total transaction costs within private transformation industries almost tripled over the past four decades. In contrast with the transaction firms, all transformation categories contributed to this rise, particularly manufacturing, transportation/communications and the service sector.

This description can be summarized by restating two main findings, which are again analogous to the conclusions arrived at in the Dutch case. First, transaction costs increase in Germany in both transaction and transformation industries over the past forty years. Second, the refined estimates are systematically lower than the N-W estimates, but show a similar configuration during the period under study.

VII.4.3 Transaction Costs in the Public Sector

The discussion on transaction costs made in the German public sector can also be relatively brief. Table 7.14 depicts the transaction costs associated with the provision of public transaction and nontransaction services, both as a percentage of GNP, during the period 1961-1987. Since Germany did not have a defense system of its own in 1950, no figures are listed for this year[13].

The table indicates a small increase in the total of transaction costs in the public sector from 9.50% of GNP in 1961 to 10.35% of GNP in 1987. The data show that this increase was caused entirely by the growth of resources used for transactions in nontransaction services. Total costs made for providing transaction services declined in

[13] In 1950, Germany did spend 4.76% of GNP as a contribution in the costs of the occupying forces [GFSO, 1955, p. 398].

a small degree, mainly due to lower military expenditures[14]. So, it can be concluded that, similar to the Dutch experience, transaction costs in the public sector in Germany rose only modestly over the years 1961-1987, fully accounted for by the transaction activities associated with the provision of nontransaction services.

VII.4.4 Total Transaction Costs

Table 7.15 summarizes tables 7.9 through 7.14 by providing a single measure of the transaction costs in the German economy as a whole. Given the previously discussed tables, it is no surprise that the course of total transaction costs in the German economy over the years closely corresponds to the course of transaction costs in the Dutch economy. It is worthwhile though to emphasize three findings that follow from table 7.15.

First, total transaction costs increased in the German economy from 44.02% of GNP in 1961 to 52.71% of GNP in 1987. Second, this growth was by and large accounted for by the private sector. Third, the refined estimates of total transaction costs were all below the N-W estimates, but showed a parallel development over the years.

It can be seen from the tables presented in this chapter that the levels of the transaction-related components differ somewhat between Germany and the Netherlands. This may to some extent be due to statistical differences, country size etc., so no conclusions with respect to the degree of specialization and division of labor in both countries should be drawn on the basis of these results. Important is to re-emphasize that the transaction-related components in the Dutch and German economy show a similar upward trend during the years considered. It seems appropriate at this point to link this result of the increasing importance of transaction costs in the economies at hand to the hypothesis of this study.

VII.5 Returning to the Hypothesis

As was said in the beginning of this chapter, the public sector in both the

[14] See footnote 8.

Netherlands and Germany grew considerably after World War II. Taking the first and last year for which the level of total transaction costs was estimated in each country, the following figures for the size of government can be given. In the Netherlands, total public expenditure (as a percentage of GNP) increased from 33.81% in 1960 to 59.69% in 1985 [Netherlands Ministry of Finance, 1990, p. 302]. Total public expenditure (as a percentage of GNP) rose in Germany from 29.81% in 1961 to 48.51% in 1987 [GFSO, 1990, p. 443]. Although relative public spending is a limited measure for the size of government, these percentages give at least some indication with respect to the growth of government in the countries at hand.

The growing share of economic activity undertaken by the government (including social security systems), as is partly illustrated by the figures given above, is hypothesized to be a result of increasing specialization and division of labor. In order to assess this hypothesis empirically, a proxy for specialization and division of labor is indispensable. Reasoning along the lines of modern industrial organization theory, the level of total transaction costs is suggested as an approximation for this variable. These transaction costs are assumed to include all the costs that are associated with performing exchanges in the economy.

Given the growth of the public sector in both the Netherlands and Germany after World War II, the hypothesis of this study has merit only if transaction costs in these countries show an increase as well during this period. Considering the empirical material presented in tables 7.1 through 7.15, it can be concluded that this is indeed the case. In both countries, the level of total transaction costs move in the appropriate direction. In fact, the growth of government appears to be quite comparable with the growth of occupations that perform the business of exchange in the economy[15].

It goes without saying that these results are no conclusive evidence for the hypothesis that specialization and division of labor caused Western governments to grow faster than the economy as a whole. More research is required to supply such evidence, particularly with respect to the estimation of the development of transaction costs in other countries. What can be inferred though, is that the empirical material provided in

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[15] A similar conclusion can be drawn for the USA, as can be obtained from the study by N-W.

this chapter does not contradict the hypothesis advocated in thesis.

VII.6 Concluding Remarks

The purpose of this chapter was to provide empirical materials in support of the hypothesis presented in this thesis. Despite several data limitations, the development of the *observable* part of the transaction costs was investigated in both the Dutch and German economy. Although a few pieces of evidence pertained to years before the Second World War, most of the results referred to the post-war period. From the analysis, five main findings resulted, which all hold for the Dutch as well as the German economy.

First, employment in the so-called transaction-related occupations (as a percentage of the total labor force) more than doubled from roughly half-way this century until about the mid 1980's. Although all industries contributed to this growth, the transformation industries contributed more than the other branches. This feature was also reflected by the continuous increase in the shares of transaction-related employment of transformation industries.

Second, transaction costs rose in both transaction and transformation industries during the post-war period.

Third, the refined estimates of transaction costs in private transaction firms were systematically lower than the N-W estimates, but gave a similar picture over the years. The estimation method introduced by N-W was less accurate than the one put forward in this study; it sufficed, however, for studying the long-term trend in transaction costs (made in the private sector at least).

Four, transaction costs within the public sector showed a small increase after World War II, entirely accounted for by the growth in resources required for transactions in nontransaction services.

Five, both the N-W estimates and the refined estimates of total transaction costs indicated an increase of roughly 8 percentage points from the early sixties onwards, by and large attributed to the private sector.

The number of employees in transaction-related jobs, and the resources they command in transaction industries, transformation industries and the government, have

thus been increasing in both the Dutch and German economy over the years considered. Obviously, this empirical finding does not constitute conclusive proof for the proposition that increasing specialization and division of labor caused bigger governments in the West. In order to obtain conclusive evidence, more research is needed, particularly regarding the estimation of transaction costs in other countries over time. The empirical material presented in this chapter only suggests the applicability of the transaction cost approach put forward in this study, and does not supply reasons to refute the central tenet of this dissertation that specialization and division of labor caused government growth in Western nations over the twentieth century.

Table 7.1 Employment in Transaction-Related Occupations, as a Percentage of the Total Labor Force; The Netherlands, 1920-1960[a].

Occupation	1920	1930	1947	1960
Accountants	0.02	0.04	0.09	0.12
Judges, Lawyers etc.	0.10	0.12	0.11	0.12
Managers	2.21	2.39	2.09	3.24
Sales Workers	2.45	3.23	3.12	4.65
Inspectors[b]	0.38	0.25	0.20	0.14
Clerical and Kindred Workers	8.02	8.26	10.81	14.06
Police, Guards etc.	0.58	0.50	0.65	0.53
Service-Men[c]	0.42	0.22	0.40	1.13
Total	**14.18**	**15.01**	**17.47**	**23.99**

Source: Based on census data [NCBS, 1966, pp. 42-5]. See appendix A for details.

[a] Excluding non-professional own account workers.

[b] Referring to conductors on trams, trains and buses.

[c] Excluding conscripts.

Table 7.2 Employment in Transaction-Related Occupations, as a Percentage of the Total Labor Force; The Netherlands, 1960-1989[a].

Occupation	1960	1975	1981	1989
Accountants	0.15	0.25	0.28	0.38
Judges, Lawyers etc.	0.15	0.20	0.28	0.49
Managers	3.07	4.75	3.90	5.80
Sales Workers	8.15	8.81	8.96	8.95
Inspectors[b]	0.19	4.02	3.07	3.87
Clerical and Kindred Workers	3.32	16.28	17.62	16.44
Police, Guards etc.	0.74	0.96	1.00	0.93
Service-Men[c]	2.96	2.21	1.79	1.48
Total	**28.73**	**37.48**	**36.90**	**38.34**

Sources: The percentages for 1960 are based on census data [NCBS, 1967, pp. 90-108]; the percentages for 1975, 1981 and 1989 are based on labor force data [NCBS, 1978, pp. 84-91; 1985a, pp. 159-60 and 1990b, pp. 98-100]. See appendix A for details.

[a] Including non-professional own account workers.

[b] The figures for 1975, 1981 and 1989 also include foremen, supervisors and other inspectors, previously classified under managers.

[c] Including conscripts.

Table 7.3 Employment in Transaction-Related Occupations per Industry, as a Percentage of the Total Labor Force; The Netherlands, 1947-1985.

Industry	1947	1960	1975	1981	1985
Agriculture, Forestry & Fishing	0.12	0.11	0.19	0.19	0.27
Mining & Quarrying	0.08	0.14	0.05	0.05	0.09
Manufacturing	2.82	5.23	6.74	5.43	5.65
Construction	0.46	0.74	1.86	1.51	1.58
Transp., Comm. & Util.	1.95	2.54	3.20	3.00	3.15
Services[a]	1.67	2.47	5.11	6.04	6.77
Trade	9.13	10.19	10.90	10.89	10.81
FIRE[b]	1.60	2.29	3.22	3.52	3.57
Government[c]	4.38	5.00	5.86	6.05	6.38
NEC[d]	0.00	0.02	0.35	0.22	0.12
Total	**22.21**	**28.73**	**37.48**	**36.90**	**38.39**

Sources: The percentages for 1947 and 1960 are based on census data [NCBS, 1967, pp. 66-7]; the percentages for 1975, 1981 and 1985 are based on labor force data [NCBS, 1978, pp. 84-91; 1985a, pp. 161-9 and 1987a, pp. 82-90]. See appendix A for details.

[a] Including Religious Organizations and Private Households.

[b] FIRE = Finance, Insurance and Real Estate.

[c] Referring to Public Administration, Defense and Social Insurance.

[d] Not Elsewhere Classified.

Table 7.4 Employment in Transaction-Related Occupations, as a Percentage of Total Employment, by Industry; The Netherlands, 1947-1985.

Industry	1947	1960	1975	1981	1985
Agriculture, Forestry & Fishing	0.63	1.05	3.60	3.53	5.26
Mining & Quarrying	5.65	9.35	20.91	27.27	39.47
Manufacturing	11.15	17.15	27.83	26.61	29.26
Construction	5.95	7.64	18.39	16.30	21.10
Transp., Comm. & Util.	26.71	31.31	43.09	41.37	44.22
Services[a]	10.70	14.82	20.28	19.41	20.08
Trade	78.79	78.41	76.83	77.14	77.25
FIRE[b]	83.69	89.38	86.92	85.97	84.73
Government[c]	83.27	75.56	70.84	80.02	80.45

Sources: See table 7.3.

[a] See table 7.3.

[b] Idem.

[c] Idem.

Table 7.5 Total Resources Used in Private Transaction Industries, as a Percentage of GNP; The Netherlands, 1947-1985. Refined Estimates in Parentheses.

Industry	1947	1960	1975	1981	1985
Trade	19.18	21.04	17.25	18.06	18.56
	(18.47)	(20.13)	(15.78)	(16.49)	(17.13)
Intermediary Costs[a]	4.96	5.50	4.40	4.52	4.53
Primary Costs[b]	14.22	15.54	12.85	13.54	14.03
	(13.51)	(14.63)	(11.38)	(11.97)	(12.60)
FIRE[c]	8.85	7.98	7.19	9.38	14.20
	(8.64)	(7.81)	(6.84)	(8.98)	(13.78)
Intermediary Costs[a]	2.05	2.12	2.32	2.34	2.32
Primary Costs[b]	6.80	5.86	4.87	7.04	11.88
	(6.59)	(5.69)	(4.52)	(6.64)	(11.46)
Total	**28.03**	**29.02**	**24.44**	**27.44**	**32.76**
	(27.11)	**(27.94)**	**(22.62)**	**(25.47)**	**(30.91)**

Sources: Based on Input-Output Tables [NCBS, 1960, app.; 1964a, app.; 1979, pp. 14-5; 1984a, pp. 64-7 and 1988, pp. 14-7]. See appendix A for details.

[a] Referring to goods and services purchased from other industries.

[b] Referring to compensations of employees, operating surplus, imports and few other cost components.

[c] See table 7.3.

Table 7.6 Resources Used for Transactions in Private Transformation Industries, as a Percentage of GNP; The Netherlands, 1947-1985.

Industry	1947	1960	1975	1981	1985
Agriculture, Forestry & Fishing	0.02	0.02	0.03	0.03	0.04
Mining & Quarrying	0.07	0.11	0.03	0.05	0.07
Manufacturing	1.51	2.74	4.23	3.36	3.33
Construction	0.16	0.31	0.94	0.76	0.75
Transp., Comm. & Util.	1.33	1.62	2.35	2.16	2.13
Services[a]	0.91	1.09	2.93	3.17	3.02
Total	**4.00**	**5.89**	**10.51**	**9.53**	**9.34**

Sources: The percentages for 1947 are based on National Accounts [NCBS, 1950, pp. 102-3]; the percentages for 1960, 1975, 1981 and 1985 are based on Input-Output Tables [NCBS, 1964a, app.; 1979, pp. 14-5; 1984a, pp. 64-7 and 1988, pp.14-7].

[a] See table 7.3.

Table 7.7 Total Resources Used in Public Transaction Services, as a Percentage of GNP; Resources Used for Transactions in Public Nontransaction Services, as a Percentage of GNP; The Netherlands, 1960-1985.

Services	1960	1975	1981	1985
Transaction Services	6.28	6.63	6.24	6.15
General Administration	1.13	1.57	1.05	1.21
Defense	4.21	3.62	3.70	3.55
Justice & Public Safety	0.94	1.44	1.49	1.39
Nontransaction Services[a]	2.32	3.28	3.78	3.46
Total	**8.60**	**9.91**	**10.02**	**9.61**

Sources: Based on Public Expenditure data [NCBS, 1964b, pp. 58-67; 1981, pp. 42-47; 1984b, pp. 38-47 and 1987b, pp. 40-49]. See apppendix A for details.

[a] Referring to all other Public Expenditure.

Table 7.8 Total Transaction Costs as a Percentage of GNP; The Netherlands, 1947-1985. Refined Estimates in Parentheses.

Sector	1947	1960	1975	1981	1985	
Private Sector	32.03	34.91	34.95	36.97	42.10	a
	(31.11)	(33.83)	(33.13)	(35.00)	(40.25)	b
Transaction Ind.	28.03	29.02	24.44	27.44	32.76	c
	(27.11)	(27.94)	(22.62)	(25.47)	(30.91)	d
Nontransaction Ind.	4.00	5.89	10.51	9.53	9.34	e
Public Sector	-	8.60	9.91	10.02	9.61	f
Transaction Serv.	-	6.28	6.63	6.24	6.15	g
Nontransaction Serv.	-	2.32	3.28	3.78	3.46	h
Total	**-**	**43.51**	**44.86**	**46.99**	**51.71**	**i**
	-	**(42.43)**	**(43.04)**	**(45.02)**	**(49.86)**	**j**

Sources: See previous tables;

Row a = Row c + Row e.

Row b = Row d + Row e.

Row f = Row g + Row h.

Row i = Row a + Row f.

Row j = Row b + Row f.

Table 7.9 Employment in Transaction-Related Occupations, as a Percentage of the Total Labor Force; Germany, 1933-1987.

Occupation	1933	1950	1961	1970	1987
Accountants	0.04	0.15	0.15	0.23	0.42
Lawyers, Judges etc.	0.12	0.23	0.24	0.30	0.48
Managers[a]	1.25	1.74	3.21	3.59	4.70
Sales Workers	5.35	7.66	8.99	10.96	11.07
Inspectors[b]	0.04	0.24	0.53	0.45	0.38
Clerical and Kindred Workers	8.04	7.15	11.15	15.33	17.51
Protective Workers[c]	0.72	0.89	0.87	2.83	2.81
Total	**15.56**	**18.06**	**25.14**	**33.65**	**37.37**

Sources: Based on census data [GISO, 1936, pp. 22-4 and pp. 155-204; GFSO, 1953, pp. 17-63; 1968, pp. 290-329; 1974b, pp. 76-311 and 1991, pp. 22-6]. See appendix B for details.

[a] Including foremen and supervisors.

[b] Referring to product inspectors.

[c] Service-Men are not included in 1950 and 1961.

Table 7.10 Employment in Transaction-Related Occupations per Industry, as a Percentage of the Total Labor Force; Germany, 1933-1987.

Industry	1933	1950	1961	1970	1987
Agriculture, Forestry & Fishery	0.16	0.04	0.04	0.12	0.20
Mining & Quarrying[a]	0.21	0.41	0.34	0.32	0.42
Manufacturing	2.79	3.58	6.18	8.23	8.04
Construction	0.22	0.29	0.38	0.60	0.97
Transp. & Comm.	1.13	1.66	1.94	2.28	2.39
Services[b]	0.75	0.98	1.94	2.74	5.73
Trade	6.86	6.65	8.70	9.66	8.78
FIRE[c]	0.94	1.05	1.78	2.67	3.48
Government[d]	2.39	2.93	3.69	6.23	6.77
NEC[e]	0.11	0.47	0.15	0.80	0.59
Total	**15.56**	**18.06**	**25.14**	**33.65**	**37.37**

Sources: See table 7.9; appendix B provided details.

[a] Including Utilities.

[b] See table 7.3.

[c] Idem.

[d] Idem.

[e] Idem.

Table 7.11 Employment in Transaction-Related Occupations, as a Percentage of Total Employment, by Industry; Germany, 1933-1987.

Industry	1933	1950	1961	1970	1987
Agriculture, Forestry & Fishery	0.54	0.18	0.30	1.49	6.26
Mining and Quarrying[a]	7.72	8.88	11.17	15.32	21.96
Manufacturing	8.86	12.01	16.45	21.85	24.49
Construction	3.58	3.66	4.92	8.35	13.68
Transp. & Comm.	23.51	30.07	34.87	40.38	41.10
Services[b]	6.61	7.61	15.10	18.66	24.54
Trade	68.73	73.85	73.48	75.20	74.02
FIRE[c]	81.08	93.86	88.54	86.71	95.73
Government[d]	71.66	78.14	66.72	72.49	65.82

Sources: See table 7.9.

[a] See table 7.10.

[b] See table 7.3.

[c] Idem.

[d] Idem.

Table 7.12 Total Resources Used in Private Transaction Industries, as a Percentage of GNP; Germany, 1950-1987; Refined Estimates in Parentheses.

Industry	1950	1961	1970	1987
Trade	20.61	20.07	18.64	15.09
	(19.64)	(19.02)	(17.39)	(13.56)
Intermediary Costs[a]	7.71	6.86	7.29	4.78
Primary Costs[b]	12.90	13.21	11.35	10.31
	(11.93)	(12.16)	(10.10)	(8.78)
FIRE[c]	7.72	8.75	10.52	18.04
	(7.65)	(8.59)	(10.29)	(17.93)
Intermediary Costs[a]	2.54	2.88	5.70	8.78
Primary Costs[b]	5.18	5.87	4.82	9.26
	(5.11)	(5.71)	(4.59)	(9.15)
Total	**28.33**	**28.82**	**29.16**	**33.13**
	(27.29)	**(27.61)**	**(27.68)**	**(31.49)**

Sources: Based on Input-Output Tables [GIER, 1969, app.; GFSO, 1977, pp. 54-60 and 1990b, pp. 112-21]. See appendix B for details.

[a] See table 7.5.

[b] Idem.

[c] See table 7.3.

Table 7.13 Resources Used for Transactions in Private Transformation Industries, as a Percentage of GNP; Germany, 1950-1987.

Industry	1950	1961	1970	1987
Agriculture, Forestry & Fishery	0.00	0.00	0.01	0.03
Mining & Quarrying[a]	0.23	0.24	0.21	0.34
Manufacturing	2.06	3.47	4.95	4.85
Construction	0.13	0.22	0.41	0.46
Transp. & Comm.	1.26	1.26	1.32	2.05
Services[b]	0.23	0.51	0.67	1.50
Total	**3.91**	**5.70**	**7.57**	**9.23**

Sources: See table 7.12 and GIER [1972, p. 43]; appendix B provides details.

[a] See table 7.10.

[b] See table 7.3.

Table 7.14 Total Resources Used in Public Transaction Services, as a Percentage of GNP; Resources Used for Transactions in Public Nontransaction Services, as a Percentage of GNP; Germany, 1961-1987.

Services	1961	1970	1980	1987
Transaction Services	6.85	5.83	6.14	5.88
General Administration	1.59	1.64	1.88	1.81
Defense	4.02	3.02	2.76	2.63
Justice & Public Safety	1.24	1.17	1.50	1.44
Nontransaction Services[a]	2.65	3.93	4.77	4.47
Total	**9.50**	**9.76**	**10.91**	**10.35**

Sources: Based on Public Expenditure data [GFSO, 1964, pp. 434-7; 1974a, pp. 400-3; 1983, pp. 420-3 and 1990a, pp. 444-7]. See appendix B for details.

[a] See table 7.7.

Table 7.15 Total Transaction Costs as a Percentage of GNP; Germany, 1950-1987; Refined Estimates in Parentheses.

Sector	1950	1961	1970	1987	
Private Sector	32.24	34.52	36.73	42.36	a
	(31.20)	(33.31)	(35.25)	(40.72)	b
Transaction Industr.	28.33	28.82	29.16	33.13	c
	(27.29)	(27.61)	(27.68)	(31.49)	d
Nontransaction Industr.	3.91	5.70	7.57	9.23	e
Public Sector	-	9.50	9.76	10.35	f
Transaction Serv.	-	6.85	5.83	5.88	g
Nontransaction Serv.	-	2.65	3.93	4.47	h
Total	-	**44.02**	**46.49**	**52.71**	**i**
	-	**(42.81)**	**(45.01)**	**(51.07)**	**j**

Sources: See previous tables;

Row a = Row c + Row e.

Row b = Row d + Row e.

Row f = Row g + Row h.

Row i = Row a + Row f.

Row j = Row b + Row f.

APPENDIX A

This appendix provides more details about the way in which the tables presented in section VII.3 are constructed. Tables 7.4, 7.6 and 7.8 are not discussed since they can easily be obtained from the sources cited and/or from the information laid down in the other tables. The tables are elucidated consecutively.

Table 7.1 Employment in Transaction-Related Occupations, as a Percentage of the Total Labor Force; The Netherlands, 1920-1960.

The census data on occupations employed in this table were confined to professional workers, salaried employees and wage-earners (including family workers, excluding wives). The occupational classifications remained consistent over the years specified. The figures on accountants, inspectors and service-men are directly obtained from the source cited, whereas the other figures are constructed. With respect to these constructed figures, note that:

- Judges, lawyers etc. also include (public) notaries and bailiffs.
- Managers also include tax consultants.
- Sales workers refer to sales agents, commercial agents, insurance agents, appraisers, shop-assistants, sellers and window-dressers.
- Clerical and kindred workers refer to secretaries, typists, book-keepers, cashiers, telephone operators, (radio) telegraphers, mail distribution personnel, messengers, library assistants and few other clerical workers.
- Police, guards etc. also include fire-fighters.

Table 7.2 Employment in Transaction-Related Occupations, as a Percentage of the Total Labor Force; The Netherlands, 1960-1989.

The census data on occupations and the labor force data used in this table refer to the entire labor force. The occupational listings remained consistent over the years considered. The percentages on accountants, lawyers, judges etc. and police, guards etc.

are directly obtainable from the sources cited, while the other percentages are compiled. Note that:

- Managers also include retailers, wholesalers, middlemen and farm managers (i.e. managers-directors and working managers in farms etc.).
- Clerical and kindred workers also include accounting machine operators and computer operators.
- Sales workers also include auctioneers.

Table 7.3 Employment in Transaction-Related Occupations per Industry, as a Percentage of the Total Labor Force; The Netherlands, 1947-1985.

Total employees in transaction-related occupations per industry can easily be calculated for the years 1975, 1981 and 1985, using the sources cited. Figures on transaction workers per industry are not available for the years 1947 and 1960. What can be obtained though for these years is information on so-called white-collar employment (including police-officers and military personnel) per industry. This type of employment is too crude a proxy for transaction-related employment, since it also includes many nontransaction workers like teachers, researchers, medical-men etc. Nonetheless, this information on white-collar employment can be used to calculate transaction-related occupations in 1947 and 1960, as is shown next.

For 1975 it is possible to relate total transaction-related jobs to total white-collar employment per industry, resulting in the following shares:

Agriculture	0.84
Coal-Mining	0.59
Manufacturing	0.76
Construction	0.75
Transp., Comm. & Util.	0.80
Services	0.32
Trade	0.95
FIRE	0.99

Government	0.88[1]

So, these indices denote the extent in which white-collar employment in an industry consists of transaction-related jobs. Assuming that these ratios have remained constant over years at hand, they are employed to determine the amount of transaction workers in 1947 and 1960.

Table 7.5 Total Resources Used in Private Transaction Industries, as a Percentage of GNP; The Netherlands, 1947-1985. Refined Estimates in Parentheses.

The 1948 input-output table for the Dutch economy is employed to calculate the resources used in private transaction industries in 1947. From this table, the following input-national income per industry (NI) ratios can be determined for both the trade and the FIRE sector:

Input/NI	Trade	FIRE
Intermediary Input/NI	0.46	0.29
Primary Input/NI	1.32	0.96
(Wages/NI)	(0.30)	(0.18)
(Other/NI)	(1.02)	(0.78)
Total Input/NI	1.78	1.25

Given the information on national income per industry in 1947, these ratios are used to calculate the inputs going into the trade and FIRE sectors in this year.

The data on national income per industry are taken from the National Accounts 1948-1950 [NCBS, 1953, p. 18], while GNP figures are obtained from the Historical

[1] As a result of the Colonial War in Indonesia, the number of conscripts was unusually large in 1947, whereas the regular forces remained rather stable. In order to correct for this exceptional situation, the number of conscripts was adjusted downward on an ad hoc basis in such a way that the conscript-regular soldier ratio in 1947 equaled the one in 1960.

Series included in the National Accounts 1989 [NCBS, 1990a, pp. 61-63].

Table 7.7 Total Resources Used in Public Transaction Services, as a Percentage of GNP; Resources Used for Transactions in Public Nontransaction Services, as a Percentage of GNP; The Netherlands, 1960-1985.

The figures on transaction services are taken from the sources indicated, while the figures on nontransaction services are constructed, using the following method. The labor costs of transaction services and educational services are subtracted from the total wage-bill of the government for the years specified in this table. The resulting sub-totals are then multiplied with the shares listed in table 7.4, in order to obtain estimates for the transaction resources used in public nontransaction services.

The reason why the labor costs associated with the provision of educational services are excluded from the total wage-bill of public nontransaction services is to avoid a considerable overestimation of the transaction resources used in public nontransaction services. For educational services dominate by and large public nontransaction services and have a relatively small share of transaction-related employment (e.g. 7.7% in 1985; for source, see table 7.3).

The labor costs for 1960 are taken from Statistical and Econometric Research [NCBS, 1961, p. 74]; the labor costs for 1975/1985 and 1981 are taken from National Accounts 1989 [NCBS, 1990a, p. 154] and National Accounts 1984 [NCBS, 1985b, p. 181], respectively.

APPENDIX B

This appendix provides more details about the way in which the tables presented in section VII.4 are compiled. Tables 7.11 and 7.15 do not need further elaboration because they can easily be arrived at using the sources cited and/or the information contained by the other tables. Again, the tables are dealt with in sequence.

Table 7.9 Employment in Transaction-Related Occupations, as a Percentage of the Total Labor Force; Germany, 1933-1987.

All figures (except for the ones of 1987) presented in this table are based on very detailed census reports on occupations. The census data for 1933, 1950 and 1961 refer to the entire labor force, whereas in 1970 and 1987 the unemployed are excluded. The occupational listings have remained consistent over the census years; most figures follow directly from the sources cited, although several notes for specific years must be made.

1933:

- all proprietors in the trade and FIRE sectors are classified under sale workers.
- all public servants in non-managing positions are classified under clerical and kindred workers.

1950/1961/1970/1987:

- product inspectors also include product sorters.
- managers also include store-keepers.

1987:

- as was already mentioned above, the census report used for this year was less detailed than the census volumes employed for the other years. Especially, this report did not reveal the numbers for the transaction-related jobs of product inspectors, accountants, store-keepers and foremen. In order to be able to provide figures for these occupations, the following assumption has been made, namely that the fractions each of these transaction-related jobs made up in the respective occupational categories of the 1987 census listings, are equal to the corresponding fractions in 1970.

Table 7.10 Employment in Transaction-Related Occupations per Industry, as a Percentage of the Total Labor Force; Germany, 1933-1987.

The occupational classifications have remained consistent over the census years, although for 1933 and 1950 the government sector was not defined clearly. In these years, the census distinguished the category "Public Services and Services in the Public Interest", which also included several services that were classified under the private sector in later census years. In order to make this category comparable with the corresponding category of government in 1961, 1970 and 1987, not all of the services contained by "Public Services and Services in the Public Interest" are classified under government in 1933 and 1950, but only the following groups: General Administration, Defense, Justice, Public Safety, Social Insurance and Social Services.

Table 7.12 Total Resources Used in Private Transaction Industries, as a Percentage of GNP; Germany, 1950-1987; Refined Estimates in Parentheses.

The 1954 and 1958 input-output tables for the German economy are employed to calculate the resources used in private transaction industries in 1950 and 1961, respectively. Analogous to the Dutch case, from these tables, the following input-domestic product per industry (DP) ratios can be determined for both the trade and the FIRE sector:

	1954		1958	
Input/DP	Trade	FIRE	Trade	FIRE
Intermediary Input/DP	0.61	0.49	0.53	0.49
Primary Input/DP	1.02	1.00	1.02	1.00
(Wages/DP)	(0.29)	(0.22)	(0.31)	(0.23)
(Other/DP)	(0.73)	(0.78)	(0.71)	(0.77)
Total Input/DP	1.63	1.49	1.55	1.49

Given the information on domestic product per industry in 1950 and 1961, these ratios

are used to calculate the inputs going into the trade and FIRE sectors in these years.

The data on domestic product per industry for 1950 and 1961 are taken from the Statistical Yearbook 1965 [GFSO, 1965, p. 555]; for 1954 and 1958 these data are taken from the corresponding input-output tables. GNP figures for 1950, 1961 and 1970 are obtained from Historical Series on the German economy [GFSO, 1985, p. 41], whereas the GNP index for 1987 is taken from the Statistical Yearbook 1990 [GSFO, 1990a, p. 566].

Table 7.13 Resources Used for Transactions in Private Transformation Industries, as a Percentage of GNP; Germany, 1950-1987.

The 1954 input-output table for the German economy is employed to calculate the wage-bills of the transformation industries in 1950. From this table, the following information with respect to the ratio labor costs-domestic product per industry (DP) can be determined for the transformation industries:

Transformation Industry	Labor Costs/DP
Agriculture, Forestry & Fishing	0.19
Mining & Quarrying	0.48
Manufacturing	0.45
Construction	0.68
Transp. & Comm.	0.59
Services	0.43

Given the data on domestic product per industry in 1950, these ratios are used to calculate the wage-bills of transformation industries in this year.

Table 7.14 Total Resources Used in Public Transaction Services, as a Percentage of GNP; Resources Used for Transactions in Public Nontransaction Services, as a Percentage of GNP; Germany, 1961-1987.

The figures on transaction services are taken from the sources indicated, whereas the figures on nontransaction services are constructed, using a method which, as a result of data limitations, differs slightly from the one employed in the Dutch case. The total wage-bill of the public sector is multiplied with the ratio workers in public nontransaction services-total workers in the public sector for the years specified in this table. The resulting sub-totals are then multiplied with the shares presented in table 7.11, in order to obtain estimates for the transaction resources used for the provision of public nontransaction services.

Because the wage-bill associated with educational services is included in this method, the figures for transaction resources in public nontransaction services are somewhat higher than the corresponding figures for the Netherlands. All employment data required for this calculation can be found in the Statistical Yearbook 1990 [GSFO, 1990a, p. 459].

CHAPTER VIII

SUMMARY AND CONCLUSIONS

VIII.1 Summary

Government has grown in every Western country throughout this century. Although many researchers studied this phenomenon of government growth, no consensus has yet emerged within the academic discourse to account for its explanation. This lack of consensus constitutes the reason for an additional investigation into the determinants of the increasing scope of public sector activity.

The objective of this study is essentially threefold: (1) to review several existing explanations for the growth of government; (2) to present an alternative hypothesis for the increasing size of the public sector; and (3) to provide empirical support for this hypothesis. In order to accomplish the second and third part, some attention is paid to the economic historical dimension of the growth of government, as well as several insights obtained from transaction costs and property rights theory.

In chapter II, the mainstream theories explaining the existence of the state are outlined. One can distinguish among the contract approach (voluntaristic theory) and the predatory or exploitation approach (coercive theory), reconciled by the distribution of violence potential amongst the principals.

Roughly speaking, there are also two mainstream economic theories about the modern state: the market failure approach and the interest group approach. The former is an interpretation of the contract view, and regards the government as an income maximizer for the society. The latter is associated with the predatory or exploitation view, considering the government as a transfer machine for redistributions of wealth and income. Likewise, these two economic approaches of the modern state are also reconcilable, once the assumptions, with respect to the distribution of political influence in terms of campaign contributions etc., amongst interest groups are taken into account.

In chapter III, the prevailing theories of the growth of government are examined. The explanations offered for government growth can be considered as extensions of the

economic theories of the state given in chapter II. The first group of explanations focuses on the increasing demand for public goods (extension of the market failure approach). From this approach only the Baumol-effect has empirical support. The second group of explanations centers on the increasing demand for redistributions towards interest groups, particularly via extending transfers (extension of the interest group theory). There is empirical material supporting this second explanation too. Nonetheless, it is argued that both approaches cannot account for a full explanation for the growth of government.

In chapter IV, it is maintained that the mainstream economic theories of the state outlined in chapter II, fail to recognize the fact that, in a positive transaction costs world, the property rights structure specified and enforced by the state, constitutes a critical determinant of the profitable opportunities in a society. Hence, this result should be included in any thorough analysis about the role of government.

In chapter V, a description is given of the increasing activities undertaken by the public sector. This description contains three components: (1) expansion of public and private goods, along with market interventions and regulations (allocation function); (2) provision of transfer payments, in-kind benefits etc. (redistribution function); and (3) deficit finance in order to stimulate the economy (stabilization function).

In addition, the growth of government is hypothesized to be the result of increasing specialization and division of labor. This process accelerated at the end of the nineteenth century because of the systematic use of science in developing new technologies.

Specialization and division of labor have two effects, both of which are crucial for the growth in government activity. On the one hand, increasing specialization and division of labor increase the tax-base and make taxation more efficient, which in turn enables the government to finance its expanding activities. On the other hand, increasing specialization and division of labor increase the demand for government transaction services (particularly specifying and enforcing property rights), social overhead services (particularly education, transportation services and urban services) and redistributions of wealth and income (particularly transfers).

In chapter VI, the level of total transaction costs in an economy is suggested as a proxy for the degree of specialization and division of labor. A simple transaction costs model is formulated in which transaction costs are assumed to include all cost

components that are associated with performing exchanges in both the private and the public sector. From this model follow two separate measures for transaction costs in these sectors: the so-called N-W measure and the refined measure.

The N-W measure for transaction costs in the private sector includes all resources used in transaction industries, plus the resources used for transactions in transformation industries. Similarly, the N-W measure for transaction costs in the public sector includes all resources used in transaction services, plus the resources used for transactions in nontransaction services.

The refined measure refers to an alternative method to estimate transaction costs in the economy. This measure is expected to provide more accurate estimation results than the N-W measure, since it excludes transformation inputs in private transaction industries, and nontransaction inputs in public transaction services.

In chapter VII, empirical support is supplied for the hypothesis advocated in this study, by estimating the development of the observable part of transaction costs in both the Dutch and German economy after World War II, using the aforementioned transaction costs measures.

Given the growth of the public sector in both the Netherlands and Germany during the post-war period, the hypothesis of this study has merit only, if the components of these economies that are associated with performing the business of exchange exhibit an increase as well in this period. The empirical material presented suggests that this is indeed the case. In this context, the empirical research results in five findings, which all hold for the Dutch and German economy.

First, employment in the so-called transaction-related occupations more than double for the years considered. Second, transaction costs rise in both transaction and transformation industries after World War II. Third, the refined estimates of transaction costs in private sector firms are systematically lower than the N-W estimates, but show a similar picture over the years. Four, transaction costs in the public sector exhibit a small increase during the post-war period, entirely due to the growth of inputs required for the provision of nontransaction services. Five, both the N-W estimates and the refined estimates of total transaction costs show an increase of roughly 8 percentage points from the early sixties onwards, by and large attributed to the private sector.

These inferences indicate the growing importance of the transaction-related

elements in both the Dutch and German economy. Obviously, these findings do not imply conclusive proof for the hypothesis that specialization and division of labor caused government growth in the West. Providing such evidence necessitates more research, particularly with respect to the estimation of the development of transaction costs in other countries. What can be concluded though, is that the empirical material presented does not contradict the tenet advocated in this study.

VIII.2 Conclusions

The main conclusions arrived at in this study can be restated briefly in the following way:

- The market failure approach and the interest group approach are not inconsistent with each other; they are reconciled by the assumptions with respect to the distribution of political influence in terms of campaign resources etc. amongst interest groups in a society.

- The main shortcoming of these economic theories of the state is that they neglect the fact, that in a positive transaction cost world, the specification and enforcement of property rights by the government, constitutes a critical determinant of the way in which resources are allocated in a society.

- Since the prevailing explanations for the growth of government can be considered as extensions of the aforementioned economic theories of the state, they are flawed by a similar defect, and remain, therefore, incomplete in their explanation for government growth.

- The inclusion of economic history, transaction costs and property rights theory leads to an alternative explanation, namely that increasing specialization and division of labor is the key factor of the growing scope of public sector activity. This development results in an expansion over time of taxes, transaction services, social overhead services and redistributions of wealth and income.

- The level of total transaction costs in an economy may serve as a proxy for the degree of specialization and division of labor.

- The refined estimates of transaction costs in both the Dutch and German private sector are systematically below the N-W estimates, but exhibit a similar pattern over the years. The transaction costs measure proposed in this study provides more accurate estimation results than the one introduced by N-W; the estimation method of N-W suffices though for studying the long-term trend in transaction costs.

- The number of employees in transaction-related occupations, as well as the resources they command in transaction industries, transformation industries and the government, increase in both the Dutch and German economy over the years taken into consideration. Although this evidence is not conclusive, it does not give reasons to reject the hypothesis put forward in this study.

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LIST OF TABLES

SUMMARY (IN DUTCH)

De activiteiten van de overheid zijn in elk Westers land gedurende de twintigste eeuw sterk in omvang toegenomen. Aan dit fenomeen is reeds door veel onderzoekers aandacht geschonken. Desondanks bestaat er geen consensus over het antwoord op de vraag waarom de overheid zo aanzienlijk is gegroeid in Westerse economieën.

Dit gebrek aan overeenstemming over de verklaring van de toegenomen rol van de overheid vormt de motivatie voor deze studie. Het doel van dit onderzoek valt uiteen in de volgende drie onderdelen: (1) het in kaart brengen van bestaande verklaringen voor de groei van de overheid; (2) het presenteren van een alternatieve hypothese voor de expansie van de publieke sector; en (3) het empirisch onderbouwen van deze hypothese. Teneinde onderdeel twee en drie te realiseren wordt enige aandacht geschonken aan zowel de economisch-historische dimensie van de groei van de overheid, alsook aan verschillende inzichten ontleend aan de z.g. transactiekosten- en eigendomsrechtentheorie.

In hoofdstuk II worden de belangrijkste theorieën die het ontstaan van de staat verklaren uiteengezet. Hierbij kan een onderscheid worden gemaakt tussen het contract-model ("vrijwillige theorie") en het exploitatiemodel ("dwangtheorie"). Het onderscheid tussen beide modellen is gelegen in de veronderstellingen betreffende de verdeling van het geweldspotentieel tussen groepen in een samenleving. Het contractmodel veronderstelt een gelijke verdeling, terwijl het exploitatiemodel van een ongelijke verdeling uitgaat.

Nadere uitwerkingen van deze twee theorieën worden binnen de economische wetenschap gebruikt ter verklaring van de rol die de overheid speelt in moderne economieën. Daarbij kan men de "market failure theory" en de "interest group theory" onderscheiden. De eerste benadering is een interpretatie van de contracttheorie en beschouwt de overheid als een organisatie die het totale inkomen in een maatschappij maximaliseert door marktgebreken te corrigeren. De tweede benadering is verwant aan de exploitatietheorie en ziet de overheid als een herverdelingsinstantie van vermogen en inkomen. Daar deze twee theorieën nadere uitwerkingen zijn van de eerder genoemde modellen van de staat, zijn ook deze benaderingen niet inconsistent met elkaar. Het

onderscheid tussen beide kan worden gevonden in de veronderstellingen met betrekking tot de verdeling van politieke invloed in termen van campagnebijdragen, lobbycapaciteit etc. tussen groepen in de samenleving.

In hoofdstuk III worden de bestaande theorieën over de groei van de overheid onderzocht. De verklaringen voor de expansie van de publieke sector kunnen worden opgevat als uitbreidingen van de theorieën over de rol van de staat die in hoofdstuk II zijn gepresenteerd. De eerste groep verklaringen is gebaseerd op de "market failure theory" en benadrukt de toegenomen vraag naar collectieve goederen als verklaringsgrondslag voor de groei van de overheid. De tweede groep verklaringen is gebaseerd op de "interest group theory" en richt zich op de gestegen vraag naar herverdelingen van vermogen en inkomen als oorzaak van de toename van overheidsactiviteiten. Beide benaderingen vinden enige steun in de empirie, maar zijn niet in staat een volledige verklaring te geven voor de groei van de overheid in Westerse democratieën gedurende de twintigste eeuw.

In hoofdstuk IV wordt beargumenteerd dat de theorieën over de staat, die in hoofdstuk II zijn weergegeven, een belangrijke tekortkoming hebben. Zij schenken namelijk geen aandacht aan het feit, dat in een "wereld van positieve transactiekosten" de door de staat gespecificeerde en gehandhaafde structuur van eigendomsrechten een cruciale determinant is van de economische ontwikkeling in een maatschappij. Dit beginsel, dat de specificatie en handhaving van eigendomsrechten door de staat voor een belangrijk deel bepalend is voor de economische ontwikkeling in een land, verdient een centrale plaats in een analyse van de staat.

In hoofdstuk V worden allereerst de volgende drie aspecten van de overheidsgroei beschreven: (1) expansie van publieke en private goederen en toenemende overheidsinterventies in de markt (allocatie functie); (2) verschaffen van inkomensoverdrachten, heffen van belastingen etc. (herverdelings functie); en (3) tekortfinanciering teneinde de economie te stabiliseren (stabilisatie functie).

Vervolgens wordt in dit hoofdstuk tegenover de eerder weergegeven theorieën aangaande de groei van deze drie overheidsfuncties een alternatieve verklaring geponeerd: de toename van specialisatie en arbeidsverdeling in de economie. Dit proces versnelde aan het einde van de negentiende eeuw toen wetenschap steeds systematischer werd toegepast bij het ontwikkelen van nieuwe technieken.

Toename van specialisatie en arbeidsverdeling heeft twee belangrijke gevolgen voor de groei van overheidsactiviteiten. In de eerste plaats wordt door een toename in specialisatie en arbeidsverdeling de belastingsgrondslag vergroot en wordt bovendien de belastingheffing meer efficient. Aldus wordt de financiële armslag van de overheid verruimd. In de tweede plaats verhoogt een toename in specialisatie en arbeidsverdeling de vraag naar door de overheid te verschaffen transactiediensten (met name specificatie en handhaving van eigendomsrechten), sociale overhead diensten (met name transport-voorzieningen en overige infrastructurele voorzieningen) en herverdelingen (met name inkomensoverdrachten).

In hoofdstuk VI wordt het niveau van de totale transactiekosten in een economie gesuggereerd als proxy voor specialisatie en arbeidsverdeling. Teneinde de totale omvang van transactiekosten in een economie te bepalen wordt een eenvoudig trans-actiekostenmodel geformuleerd. Transactiekosten in dit model zijn gedefinieerd als alle kosten verbonden aan het realiseren van transacties in zowel de private als de publieke sector. Uit het model volgen twee maatstaven voor de in de respectievelijke sectoren gemaakte transactiekosten: de North and Wallis (N-W) maatstaf en een meer verfijnde maatstaf.

Volgens de N-W maatstaf omvatten de transactiekosten in de private sector alle inputs die worden gebruikt in transactie-industrieën, vermeerderd met alle inputs die noodzakelijk zijn voor transacties in transformatie-industrieën. De transactiekosten in de publieke sector omvatten naar deze maatstaf alle inputs die worden gebruikt bij het verschaffen van transactiediensten, vermeerderd met alle inputs die noodzakelijk zijn voor transacties bij het voortbrengen van non-transactiediensten.

De verfijnde maatstaf betreft een alternatieve methode om transactiekosten in een economie te meten. Van deze maatstaf wordt verwacht dat hij nauwkeurigere resultaten oplevert dan de N-W maatstaf, omdat deze methode de transformatie-inputs in transactie-industrieën en de non-transactie-inputs in transactiediensten uitsluit van het totaal aan transactiekosten.

In hoofdstuk VII wordt de hypothese van deze studie onderbouwd vanuit de empirie door met behulp van de zojuist gedefinieerde maatstaven de ontwikkeling van de transactiekosten te schatten in zowel de Nederlandse als de West-Duitse economie na de Tweede Wereldoorlog.

Gegeven de groei van de publieke sector in zowel Nederland als West-Duitsland gedurende de naoorlogse periode vindt de hypothese van deze studie alleen dan bevestiging indien de transactiecomponenten in beide economieën ook een stijging vertonen gedurende deze jaren. Het empirisch materiaal dat in dit hoofdstuk wordt gepresenteerd suggereert dat dit inderdaad het geval is. Het empirisch onderzoek resulteert in dit verband in een vijftal conclusies dat voor de Nederlandse en de West-Duitse economie geldt:

(1) De werkgelegenheid in de z.g. transactieberoepen vertoont meer dan een verdubbeling over de in beschouwing betrokken jaren;
(2) Transactiekosten stijgen in zowel transactie- als transformatie-industrieën na de Tweede Wereldoorlog;
(3) De verfijnde schattingen van transactiekosten in de private sector zijn systematisch lager dan de N-W schattingen, maar vertonen een soortgelijke ontwikkeling over de tijd;
(4) Transactiekosten in de publieke sector vertonen slechts een kleine stijging die volledig wordt veroorzaakt door de toename in transactie-inputs gebruikt bij het verschaffen van non-transactiediensten.
(5) Zowel de N-W schattingen als de verfijnde schattingen van de totale transactiekosten laten een stijging zien van ongeveer 8% -punten vanaf het begin van de jaren zestig, hoofdzakelijk bepaald door de private sector.

Deze bevindingen bevestigen het toenemend belang van de transactiecomponenten in de Nederlandse en de West-Duitse economie. Natuurlijk vormen zij geen afdoende bewijs voor de stelling dat de toename in specialisatie en arbeidsverdeling de oorzaak is van de overheidsgroei in het Westen. Voor een afdoende bewijs is meer onderzoek nodig, met name naar het schatten van de ontwikkeling van transactiekosten in andere economieën. Er kan evenwel worden vastgesteld dat het gepresenteerde empirische materiaal geen aanleiding geeft de hypothese van deze studie te verwerpen.